Macintosh User's Guide

Includes setup, troubleshooting, and important health-related information for your Macintosh computer

Apple Computer, Inc.

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Contents

Communications regulation information vi

1 Getting Started 1

Plugging in the computer 1
Installing an expansion card 3
Connecting a monitor 3
Connecting the mouse and keyboard 6
Connecting other equipment 7
Turning the computer on 8
Problems turning your computer on? 10
What's next? 11
Learning the basics 12
Reviewing the basics 13
Turning the computer off 14
Where to find answers 15

2 Getting Help 17

Getting answers to your questions 18
Identifying objects on the screen 26
Learning useful shortcuts 27

3 Connecting Additional Equipment 29

Where to connect additional equipment 30

Connecting an Apple PlainTalk Microphone 31

Connecting external stereo speakers 32

Expanding memory 34

Installing internal drives 34

4 Installing and Using Application Programs 35

Installing application programs 36

Working with several programs at a time 37

Backing up your files 38

5 Troubleshooting 39

When you have questions 39

When you run into trouble 39

Solutions to common problems 43

Initializing a hard disk 54

Repairing a damaged disk 59

Installing or reinstalling system software 64

Appendix A Health, Safety, and Maintenance Tips 75

Health-related information about computer use 75

Safety instructions 80

Handling your computer equipment 81

Cleaning your equipment 85

Appendix B Installing an Expansion Card 87

Opening the computer 89

Installing a processor-direct slot (PDS) card 92

Installing a communication card 93

Closing the computer 95

Appendix C Special Keys on Your Keyboard 99

Index 101

Communications regulation information

FCC statement

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. See instructions if interference to radio or television reception is suspected.

Radio and television interference

The equipment described in this manual generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple's instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio. (That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, consult an Apple-authorized service provider or Apple. See the service and support information that came with your Apple product. Or, consult an experienced radio/television technician for additional suggestions. You may find the following booklet helpful: *Interference Handbook* (stock number 004-000-00493-1). This booklet, prepared by the Federal Communications Commission, is available from the U.S. Government Printing Office, Washington, DC 20402.

IMPORTANT Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC Certification and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Apple peripheral devices and Apple shielded cables and connectors between system components. It is important that you use Apple peripheral devices and shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. You can obtain Apple peripheral devices and the proper shielded cables and connectors through an Apple-authorized dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance.

DOC statement

DOC Class B Compliance This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of the Department of Communications.

Observation des normes—Classe B Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur : “Appareils Numériques”, NMB-003 édictée par le ministre des Communications.

VCCI statement

情報処理装置等電波障害自主規制について

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しかし、本装置をラジオ、テレビジョン受信機に近接してご使用になると、受信障害の原因となることがあります。

取扱説明書に従って正しい取り扱いをしてください。

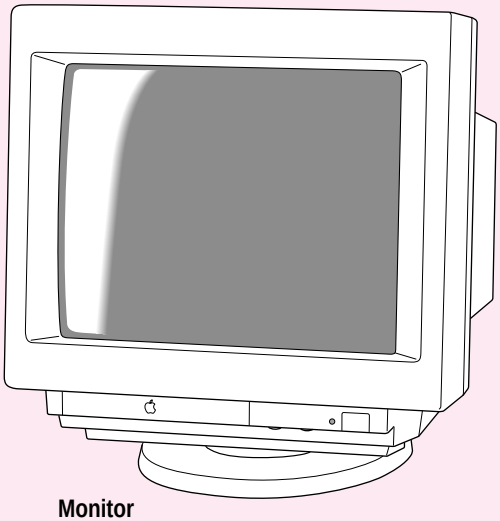
CD-ROM drive

WARNING Making adjustments or performing procedures other than those specified in your equipment’s manual may result in hazardous exposure.

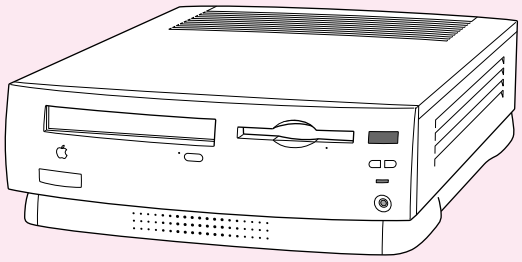
WARNING Do not attempt to disassemble the cabinet containing the laser. The laser beam used in this product is harmful to the eyes. The use of optical instruments, such as magnifying lenses, with this product increases the potential hazard to your eyes. For your safety, have this equipment serviced only by an Apple-authorized service provider.

If you have an internal Apple CD-ROM drive in your computer, your computer is a Class 1 laser product. The Class 1 label, located on the computer, indicates that the drive meets minimum safety requirements. A service warning label is on the CD-ROM drive inside the computer.

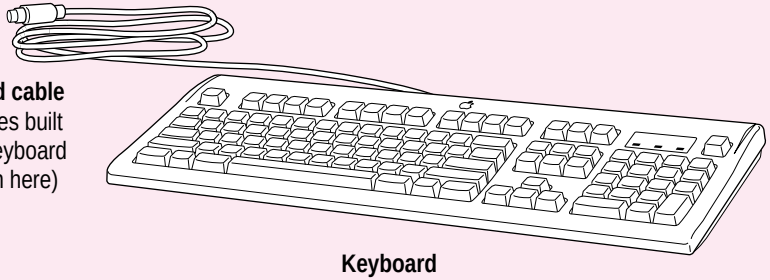




Monitor

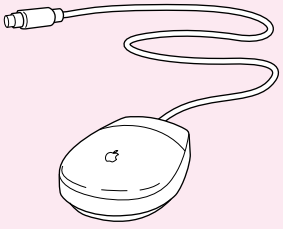


Macintosh computer

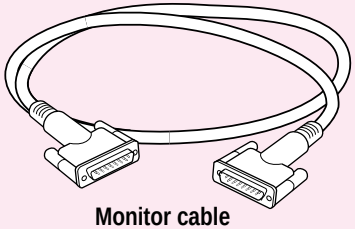


Keyboard cable
(sometimes built into the keyboard as shown here)

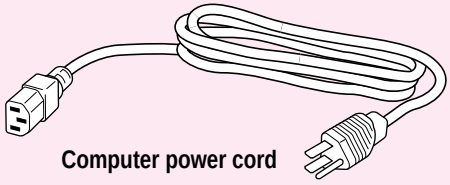
Keyboard



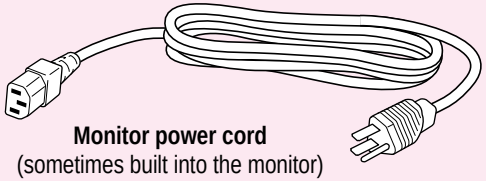
Mouse



Monitor cable
(sometimes built into the monitor)



Computer power cord



Monitor power cord
(sometimes built into the monitor)

Follow the instructions in this chapter to set up your computer and learn the basics.

1 Getting Started

The illustration on the facing page shows all the equipment you will need to set up your computer and begin using it. Place your equipment on a sturdy, flat surface near a grounded wall outlet. Before following the setup instructions in this chapter, you may want to read “Arranging Your Office” in Appendix A (in the section on health-related information) for tips on adjusting your work furniture so that you’re comfortable when using the computer.

Plugging in the computer

Before you plug your Macintosh into a wall socket, carefully read all the setup instructions in this chapter. Then, before you connect anything to your Macintosh, follow the instructions in this section to plug it in. The plug grounds the computer and protects it from electrical damage while you are setting up.

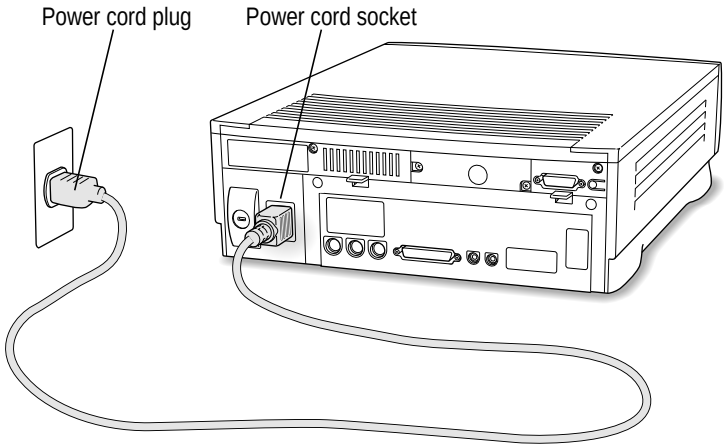
When you are ready to begin, follow these steps:

1. **Plug the socket end of the computer's power cord into the recessed power cord socket (marked with the symbol ∼) on the back of the computer.**

2. **Plug the other end of the power cord into a three-hole grounded outlet or power strip.**

Choose a power outlet to which you have easy access.

WARNING This equipment is intended to be electrically grounded. Your Macintosh is equipped with a three-wire grounding plug—a plug that has a third (grounding) pin. This plug will fit only a grounded AC outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a licensed electrician to replace the outlet with a properly grounded outlet. Do not defeat the purpose of the grounding plug!



IMPORTANT Be sure that at least one end of the power cord is within easy reach so that you can unplug the computer when you need to.

If the computer starts up: If you hear a tone, the computer has started up and you need to turn it off before proceeding. Press the power button (also called the standby power button) located on the back of the computer to turn the computer off.

Installing an expansion card

If you purchased any expansion cards for your Macintosh, install them now. (For instructions, see Appendix B, “Installing an Expansion Card,” as well as the documentation that came with the cards.) If you don’t have an expansion card, go on to the next section, “Connecting a Monitor.”

Connecting a monitor

You can connect many types of monitors to your Macintosh. To connect a monitor from a manufacturer other than Apple, refer to the instructions that came with the monitor.

Connecting the monitor power cord

Monitors have two cords to connect—a power cord and a monitor cable.

To connect the monitor power cord, follow these steps:

1 **Place the monitor where you will be using it.**

You may place it on top of your computer. Keep these considerations in mind:

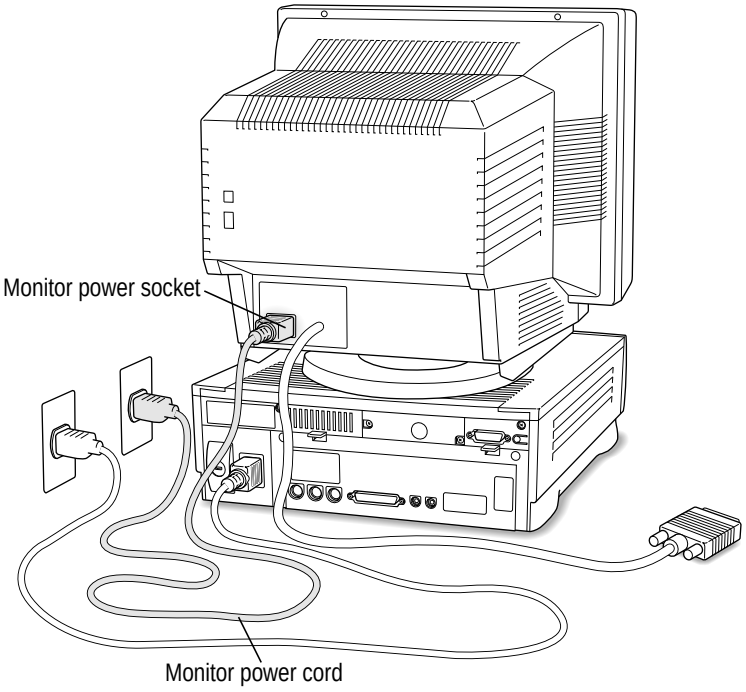
- Allow a few inches for air circulation around the sides of the computer and monitor.
- Make sure that the top of the screen is slightly below eye level when you’re sitting at the keyboard.
- Position the monitor to minimize glare and reflections on the screen from overhead lights and windows.
- Consult “Arranging Your Office” in Appendix A for suggestions on locating your computer equipment.

2 **Connect the monitor power cord to the monitor.**

On some monitors, the cord is already attached.

3 **Plug in the monitor power cord.**

Be sure to plug the power cord into a three-hole grounded outlet or power strip.



Connecting the monitor cable

After you plug in the monitor power cord, you connect the monitor cable to the computer's monitor port.

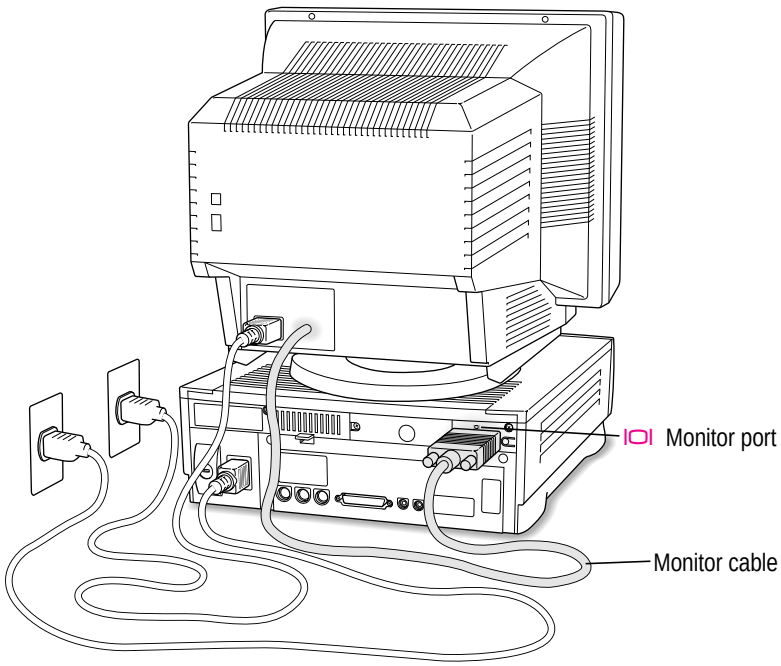
To connect the monitor cable, follow these steps:

1 **Attach the monitor cable to the monitor.**

On some monitors, the cable is already attached (as shown below).

2 **Attach the monitor cable to the monitor port on the back panel of the computer.**

The monitor port is marked with the |O| icon (symbol).



Connecting the mouse and keyboard

You have a choice of several keyboards for your Macintosh. The way you connect the mouse and keyboard depends on whether the keyboard has a separate cable or a built-in cable.

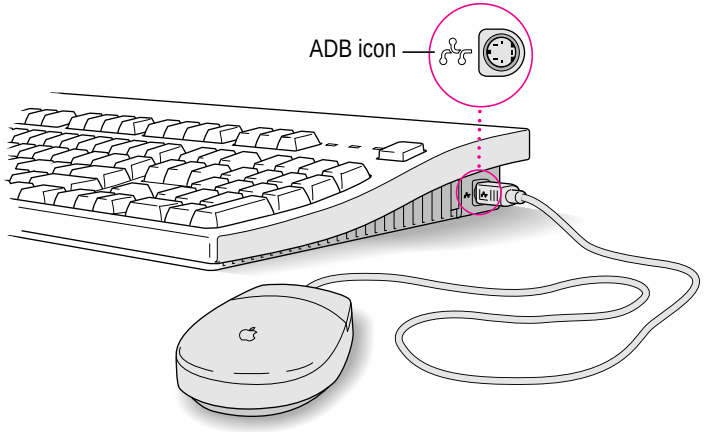
Connecting a keyboard with a separate cable

1 **Plug the mouse cable into the port on either side of the keyboard.**

Most right-handed people prefer to use the mouse with their right hand; most left-handed people prefer to use their left hand. Plug the mouse into the port on the side you prefer.

The plug and the port are marked with the ⌘ icon (symbol). Align the symbols before you insert the plug. (The positions of the port and icon on your keyboard may be different from those pictured here.)

By the way: A port marked with the ⌘ icon is called an Apple Desktop Bus (ADB) port.



2 **Plug the keyboard cable (both ends are the same) into the other port on the keyboard.**

If you plugged the mouse cable in on the right, for example, plug the keyboard cable in on the left.

3 **Plug the keyboard cable into the port marked with the ⌘ icon on the back of the computer.**

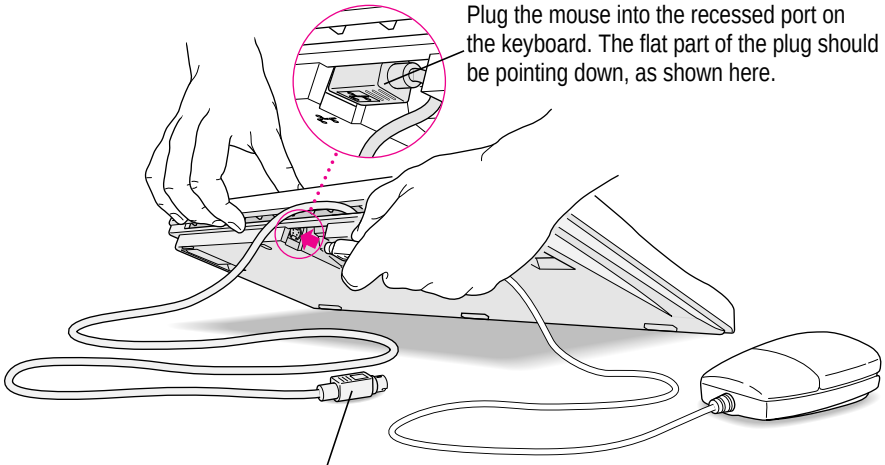
Some monitors have a port to which you can connect the keyboard or mouse. See the information that came with your monitor.

Connecting a keyboard with a built-in cable

1 **Plug the mouse cable into the recessed port on the back of the keyboard.**

The plug and the port are marked with the ⌥ icon (symbol). The positions of the port and icon on your keyboard may be different from those pictured.

By the way: A port marked with the ⌥ icon is called an Apple Desktop Bus (ADB) port.



2 **Plug the keyboard cable into the port marked with the ⌥ icon on the back of the computer.**

Some monitors have a port to which you can connect the keyboard or mouse. See the information that came with your monitor.

Connecting other equipment

If you are new to the Macintosh, it's a good idea to get some experience using your computer before you connect other equipment, such as a printer or scanner. To learn basic Macintosh skills, continue with the instructions in this chapter.

When you're ready to connect other equipment to your Macintosh, see the instructions in Chapter 3.

Turning the computer on

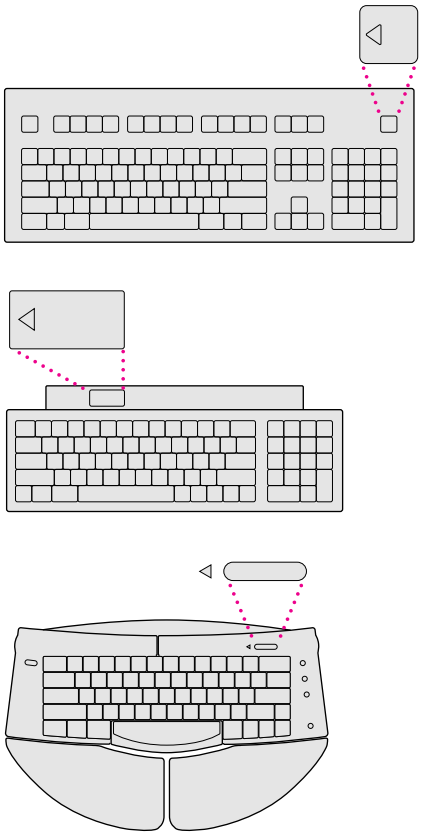
Follow these steps to turn the computer on:

1 **Turn on the monitor.**

See the information that came with your monitor for the location of the power button.

2 **Turn on your computer by pressing the Power key.**

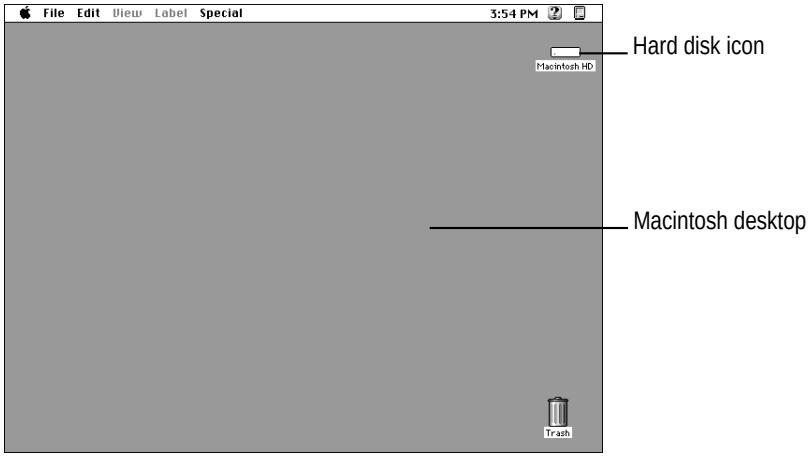
The Power key is at the top of the keyboard. You can recognize this key by the triangle outline on it (◁).



You hear a tone from the computer as it starts up.

3 Check to see what's on your screen.

- If you see the Macintosh desktop, as in the illustration below, your system software has already been installed, and your computer is ready to use. Skip now to the section "What's Next?" later in this chapter.



- If you see a blinking question mark, you need to install system software on your computer's hard disk. (System software is the set of programs your computer uses to start itself up.) See "Installing or Reinstalling System Software" in Chapter 5 for information on how to install system software.
- If you see anything else on your screen, or nothing at all, see the next section, "Problems Turning Your Computer On?"

Problems turning your computer on?

If you don't see anything on the screen, check these items to see if you can identify the problem:

- Is the computer plugged into a power source? If it is plugged into a power strip, is the power strip turned on?
- Is the computer turned on? The power-on light on the front panel should be on. If it isn't on, press the standby power button on the computer's back panel (marked with the symbol ⏻).
- Are the keyboard and mouse cables connected correctly? (Don't disconnect the keyboard or mouse cable while the computer is on. You could damage your equipment.)
- Is the monitor power cord plugged in?
- Is the monitor turned on? (Check the power-on light on the front of the monitor.)
- Is the monitor cable attached firmly to both the monitor and computer?
- Is the brightness control on the monitor adjusted correctly? (On Apple monitors, the brightness control is marked with the symbol ☼.)

What's next?

Congratulations! You've finished setting up your computer. Now continue with one of the following steps:

- If you are new to the Macintosh, turn to the next section, "Learning the Basics."
- If you are an experienced Macintosh user, turn to Chapter 2, "Getting Help," to learn about Macintosh Guide, your main source of information when you're working with the Macintosh.
- If you want to connect other equipment, such as a printer, to your computer, see Chapter 3, "Connecting Additional Equipment."

Before you begin working with your computer, be sure to read the important health and safety information in Appendix A.

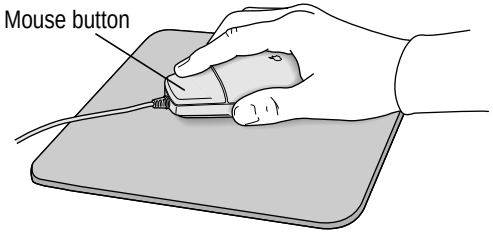
IMPORTANT If you need to turn off your computer at any point, please see "Turning the Computer Off" later in this chapter. It is very important to use the correct procedure for shutting down your Macintosh before turning it off.

Learning the basics

If you are new to the Macintosh, you should begin by looking at the easy-to-use program called the Macintosh Tutorial. The tutorial teaches you the basic skills you'll need to use your computer. To start the tutorial, follow these steps:

1 **Slide your mouse along your mouse pad or desk.**

Hold the mouse as shown, with the cable pointing away from you. Don't press the mouse button (under your index finger). Notice that the arrow (↖) on the screen moves in the same direction that you move the mouse.



If the arrow doesn't move, make sure that the cables connecting the mouse and keyboard are secure and that your mouse is positioned as shown in the illustration.

2 **Move the tip of the arrow (↖) to the question mark (?) in the upper-right portion of the screen.**

If you run out of room on your mouse pad or desk while moving the mouse, pick up the mouse and place it where there's more room. (The arrow on the screen moves only when the mouse is in contact with the mouse pad or desk.)

3 **With the tip of the arrow on the question mark, press and hold down the mouse button.**

A list of choices (called a *menu*) appears. This is the Guide (?) menu, which is the place to go when you have a question about how to use your computer.

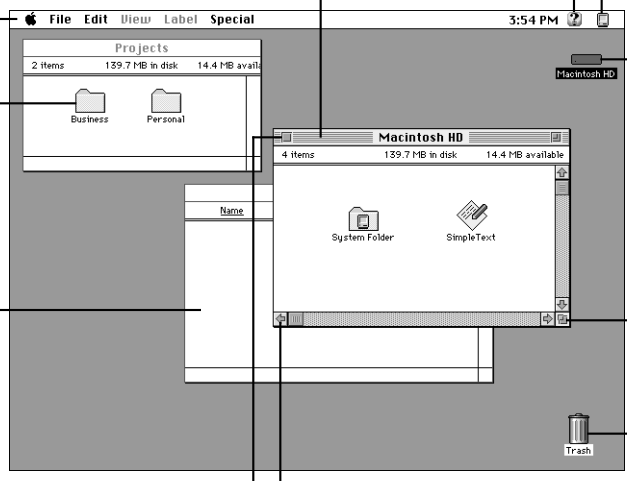


4 **While holding down the mouse button, move the arrow until the words "Macintosh Tutorial" are highlighted, then release the mouse button.**

A window appears welcoming you to the tutorial. You can set this book aside for now and follow the instructions on the screen. When you have completed the tutorial, return to this book.

Reviewing the basics

The following illustration summarizes many of the basic skills and terms you learned from the tutorial.



The strip across the top of the screen is called the **menu bar.** The symbols and words in it represent menus of commands.

To move a window, drag it by the **title bar.**

To find an answer to a question, look in the **Guide (?) menu.**

You can have several application programs open at once. To see which program is active or to switch from one program to another, use this menu (called the **Application menu**).

This icon represents your computer's internal **hard disk.**

Icons are small pictures that represent disks, folders, programs, and documents. To open an icon, click the icon twice quickly.

Windows are boxes that display text, graphics, or icons. To bring a partially covered window to the front, click anywhere in the window.

To change the size or shape of a window, drag the **size box.**

To throw away an item you no longer want, drag it to the **Trash** and choose Empty Trash from the Special menu.

To close a window, click the **close box.**

To bring hidden portions of a window's contents into view, click the **scroll arrows.**

Turning the computer off

To turn the computer off, you choose Shut Down from the Special menu. Detailed instructions follow.

1 **Move the tip of the arrow to the word “Special” at the top center of the screen.**



If the word “Special” does not appear at the top of the screen, you’re working in the wrong program. Pull down the Application menu (to the right of the Guide [?] menu) and choose Finder. Then try step 1 again.

2 **With the tip of the arrow on the word “Special,” press and hold down the mouse button.**

3 **While holding down the mouse button, move the arrow down the list of choices until the words “Shut Down” are highlighted, then release the mouse button.**



You can also shut down your computer from the keyboard.

1 **Press the Power key (marked with a triangle) on the keyboard.**

You will see a message asking whether you want to shut down or continue working.

2 **Click Shut Down.**

To turn the computer on, simply press the Power key again.

WARNING Do not turn the computer off by pressing the standby power button on the back panel. If you do so, you may lose any work you haven’t previously saved to a disk. You also risk losing any open documents.

Where to find answers

When you have questions about using your Macintosh, there are several places you can look for answers.



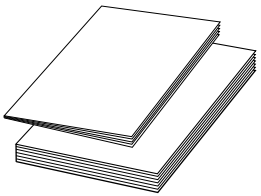
In this book

Use this book to help you set up your computer and learn about it, or to find solutions to problems.



In the Guide menu

The Guide menu (marked with the ? icon) is your main source of information about the Macintosh. To learn how to get different kinds of help from the Guide menu, see Chapter 2 in this book.



In other manuals

For answers to questions about other equipment or about application programs you have purchased, see the manuals that came with the equipment or programs.



From Apple's customer support hotline

If you can't find an answer in any of the materials provided, call the customer support hotline. (The phone number for the hotline is in the service and support information that came with your computer.)

Use the instructions in this chapter to learn about the help available to you in the Guide menu.

2 Getting Help

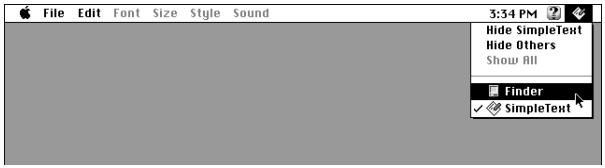
The Guide menu is your main source of information when you're working with your computer. The menu is identified by a question mark (?) in the upper-right corner of the screen.



Getting answers to your questions

When you have a question while working with your computer, you can get the answer by choosing Macintosh Guide from the Guide menu.

1 **Pull down the Application menu (in the upper-right corner of the screen) and choose Finder to make it the active application program.**

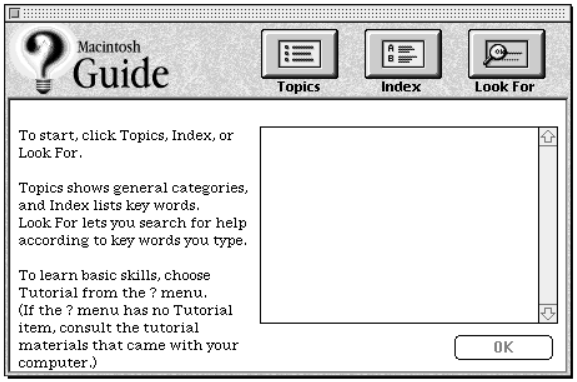


A checkmark in the menu indicates that the Finder is the active program.

2 **Pull down the Guide menu (marked with the ? icon) and choose Macintosh Guide.**

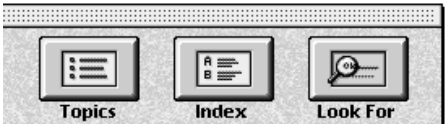


The Macintosh Guide window appears.



Whenever you use Macintosh Guide, its window remains in front of other windows. If the window gets in your way, you can move it by dragging its title bar (the gray bar across the top of the window).

3 **Notice the three buttons at the top of the window: Topics, Index, and Look For.**



Macintosh Guide gives you three ways of finding information:

- **Topics** lets you choose from a list of general subjects; it is like the table of contents in a book.
- **Index** lets you choose from an alphabetical list of more specific subjects; it is like the index in a book.
- **Look For** lets you search for information related to a specific word or phrase that you type.

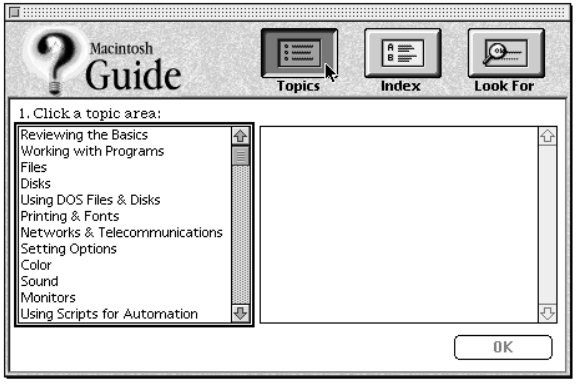
In the following sections you will practice using each method.

If you have problems while using Macintosh Guide, see “Tips for Using Macintosh Guide” later in this chapter.

Getting answers with the Topics button

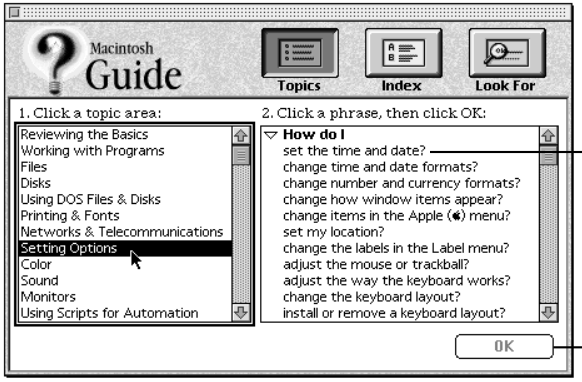
1 **In the Macintosh Guide window, click the Topics button.**

A list of general topics appears on the left side of the Macintosh Guide window. (Depending on the hardware and software you have, the list of topics may look different.)



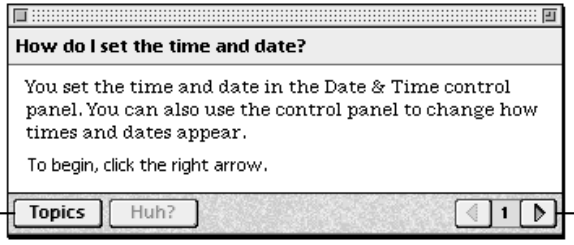
2 **Click “Setting Options” in the list of topics.**

When you click any topic area, a list of related questions appears on the right side of the Macintosh Guide window.



3 **Click the question “How do I set the time and date?” and then click OK. Or double-click the question.**

A small window appears with instructions for you to follow.



4 **Read and follow the instructions in this window.**

Macintosh Guide provides step-by-step instructions to answer the question you selected. When you have completed each step, click the right arrow in the lower-right corner to see the next step.

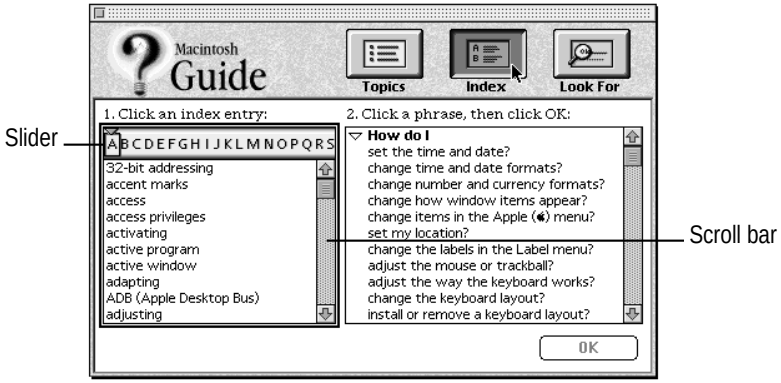
5 **When you have completed all the steps, click the Topics button in the lower-left corner to return to the main Macintosh Guide window.**

Now continue with the next section.

Getting answers with the Index button

1 **In the Macintosh Guide window, click the Index button.**

An alphabetical list of subjects appears on the left side of the window.

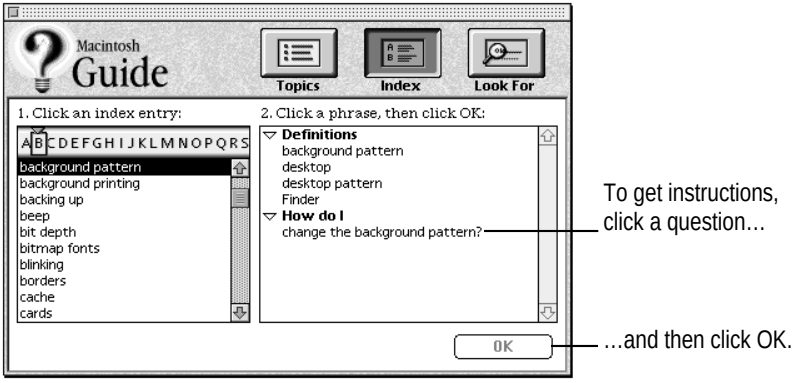


2 **Scroll through the alphabetical list until the phrase “background pattern” is visible.**

You can scroll through the list either by dragging the slider to the letter *B* or by using the scroll bar at the right of the list.

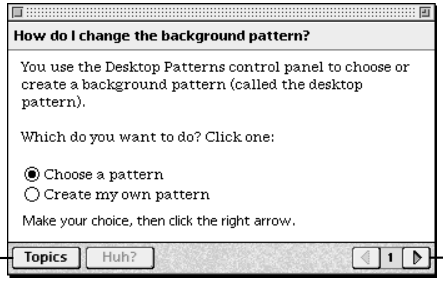
3 **Click the phrase “background pattern” in the alphabetical list.**

When you click any index entry, a list of related questions appears on the right side of the Macintosh Guide window.



4 **Click the question “How do I change the background pattern?” and then click OK. Or double-click the question.**

A small window appears with instructions for you to follow.



If you want to return to the main Macintosh Guide window, click here.

Click here to see the next step (if there is one).

5 **Read and follow the instructions in the window.**

Macintosh Guide provides step-by-step instructions to answer the question you selected. When you have completed each step, click the right arrow in the lower-right corner to see the next step.

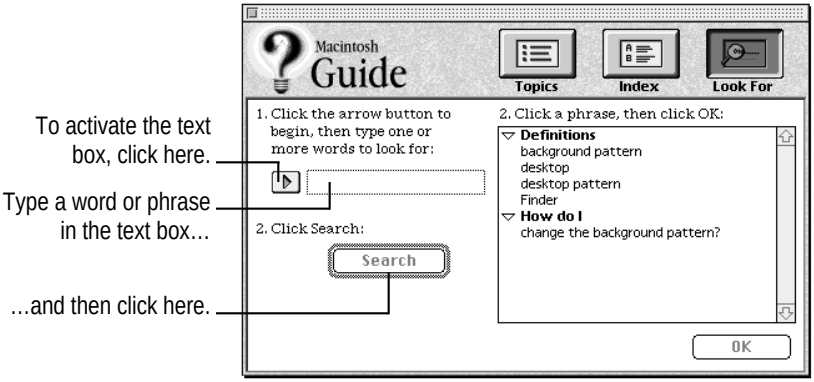
6 **When you have completed all the steps, click the Topics button in the lower-left corner to return to the main Macintosh Guide window.**

Now continue with the next section.

Getting answers with the Look For button

1 **In the Macintosh Guide window, click the Look For button.**

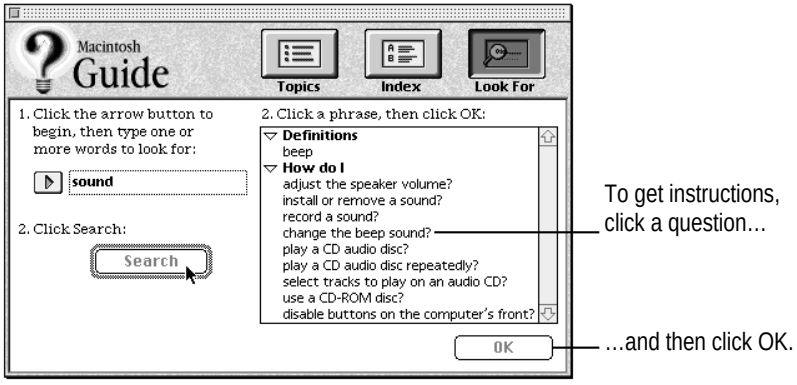
A small box appears on the left side of the window, where you can type text.



2 **Click the arrow button to activate the text box.**

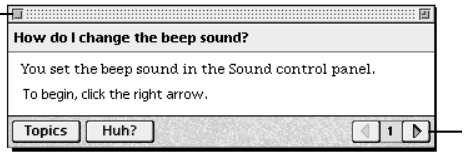
3 **Type “sound” in the text box and then click Search.**

When you click Search, a list of questions related to the word or phrase you typed appears on the right side of the Macintosh Guide window.



4 **Click the question “How do I change the beep sound?” and then click OK. Or double-click the question.**

A small window appears with instructions for you to follow.



5 **Read and follow the instructions in the window.**

Macintosh Guide provides step-by-step instructions to answer the question you selected. When you have completed each step, click the right arrow in the lower-right corner to display the next step.

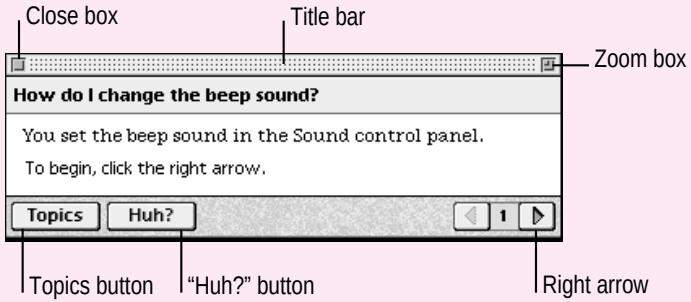
6 **When you have completed all the steps, click the close box in the upper-left corner to close Macintosh Guide.**

Tips for using Macintosh Guide

Here are a few tips for using Macintosh Guide effectively:

- Macintosh Guide is available only when you are in the Finder—the desktop area where you can see the icons of disks, folders, and files. (Other programs may also have help available in the Guide menu, however.) If you don't see Macintosh Guide in the Guide menu, pull down the Application menu (to the right of the Guide menu) and choose Finder.
- Follow the steps when you're instructed to; don't skip ahead or read ahead. That way the computer can check to make sure you've done a step correctly.
- Unlike most windows, the Macintosh Guide window stays in front of other windows on the screen so that your instructions are never covered. If you need to move the Guide window out of the way, drag it by the title bar at the top of the window.

  You can also move the window out of the way by clicking the zoom box. Click the box once to shrink the window; click it a second time to expand the window to its original size.
- If you need more information about an instruction or a term, click the button labeled "Huh?" to get further explanation. (The "Huh?" button is dimmed when no additional information is available.)
- If you want to return to the main Macintosh Guide window, click the Topics button in the lower-left corner of the Guide window.
- When you're finished using Macintosh Guide, click the close box in the upper-left corner of the window.



Identifying objects on the screen

Sometimes you'll see an unfamiliar item on the screen and ask yourself, "What's that?" You can get an answer by using a Macintosh feature known as Balloon Help.

Balloon Help explains the function of icons, menus, commands, and other items on the Macintosh screen in balloons like those you see in comic strips.

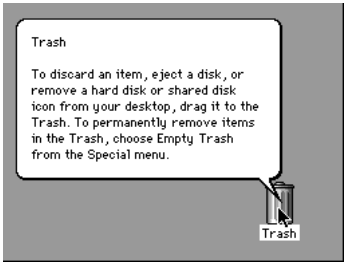
Follow these steps to use Balloon Help:

1 **Pull down the Guide menu (marked with the ? icon) and choose Show Balloons.**



2 **Point to any object on the screen that you want to identify.**

A balloon appears next to the object. In the following illustration, for example, pointing to the Trash displays a balloon that explains how to use the Trash to throw items away.



Although balloons appear next to items when you point to them, the way you work does not change; you can still select icons, choose commands, and so on.

3 **When you're finished using Balloon Help, choose Hide Balloons from the Guide menu.**

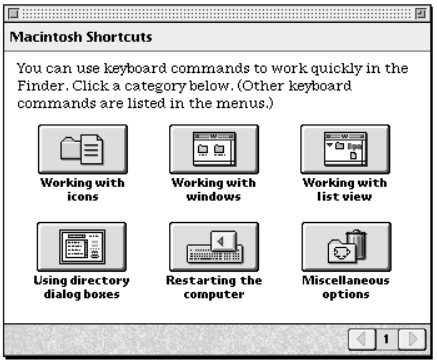
Learning useful shortcuts

You can perform many tasks in the Finder more quickly if you use keyboard or mouse shortcuts. For example, instead of clicking an icon and choosing Open from the File menu, you can simply double-click the icon to open it.

Follow these steps to learn keyboard and mouse shortcuts:

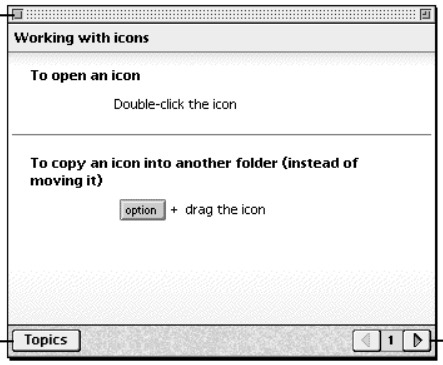
1 **Pull down the Guide menu (marked with the ? icon) and choose Shortcuts.**

The main Macintosh Shortcuts window appears.



2 **Click one of the category buttons.**

Another window appears, describing shortcuts for that category.



3 **Read about the shortcuts available for the category you selected.**

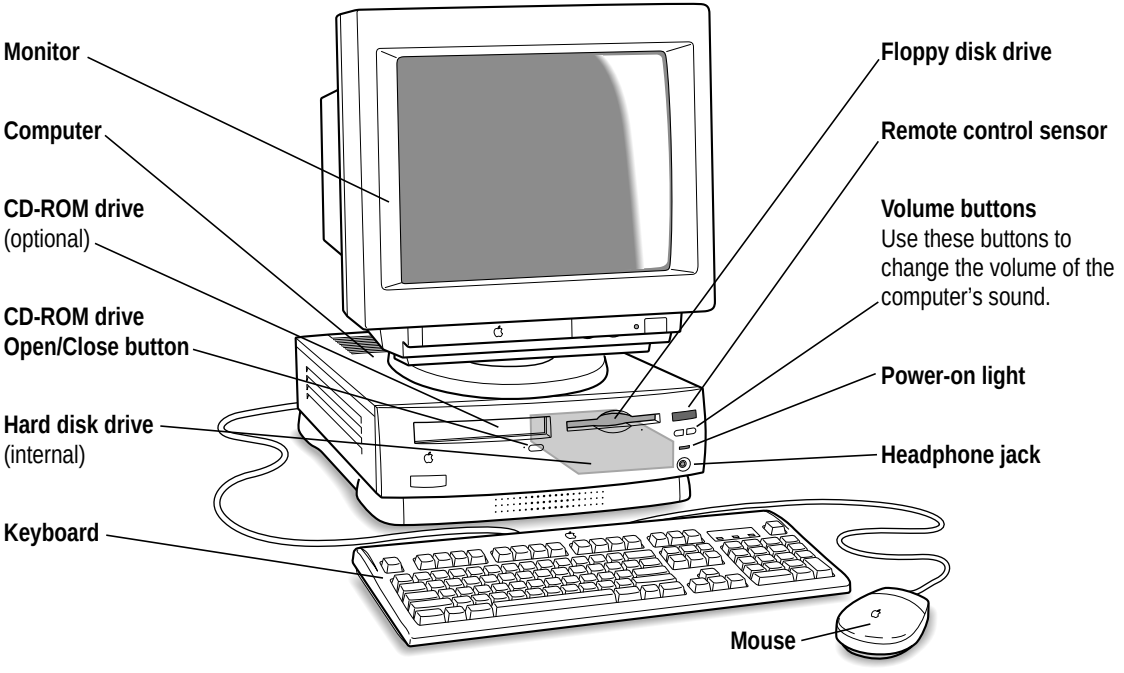
Click the right arrow in the lower-right corner of the window to display the next window (if there is one).

4 **When you finish reading about the shortcuts for your category, click the Topics button in the lower-left corner to return to the main Macintosh Shortcuts window. Or click the close box in the upper-left corner to close the window.**

Read this chapter for information on expanding your computer system with additional hardware.

3 Connecting Additional Equipment

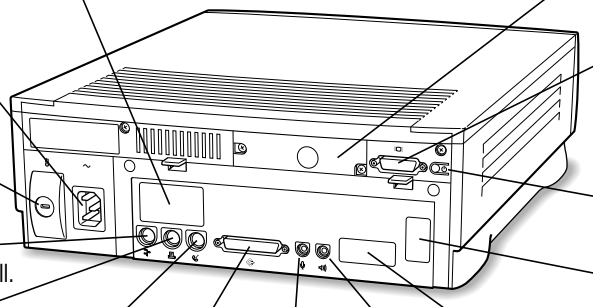
The illustration below shows a basic Macintosh system. You can expand your computer system by connecting additional hardware (such as a printer, modem, or external audio speakers).



Where to connect additional equipment

The illustration on this page shows where equipment should be connected to your computer.

For instructions on connecting additional equipment such as a printer or scanner, see the manual that came with the equipment.



Video input card access cover
Covers port for optional video input card.

Power socket

Security lock port

ADB port
Connects your Macintosh to input equipment, such as a keyboard or a trackball.

Printer port
Connects your Macintosh to a printer or LocalTalk network.

Modem port
Connects an external modem to your Macintosh.

SCSI port
Connects your Macintosh to SCSI equipment, such as hard disk drives, scanners, and printers.

Sound input port
Connects your Macintosh to a microphone or other audio input equipment.

TV tuner access cover
Covers port for optional TV tuner card.

Monitor port
Connects your monitor to your Macintosh.

Standby power button

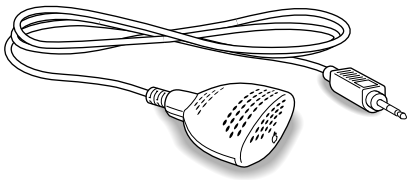
Communication card access cover
Covers port for optional communication card.

PDS card access cover
Covers port for optional processor-direct slot (PDS) expansion card.

Sound output port
Connects your Macintosh to headphones, speakers, or other audio output equipment.

Connecting an Apple PlainTalk Microphone

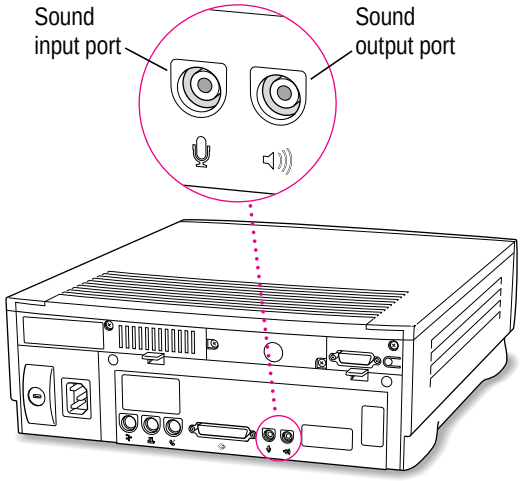
Your computer has a sound input port, which you can use to connect an Apple PlainTalk Microphone.



Use PlainTalk only: You should connect only the Apple PlainTalk Microphone. Other models of microphone will not work with your Macintosh.

To connect the microphone, do this:

- **Plug the microphone's connector into the sound input port (marked with the icon 🎙) on the back of the computer.**



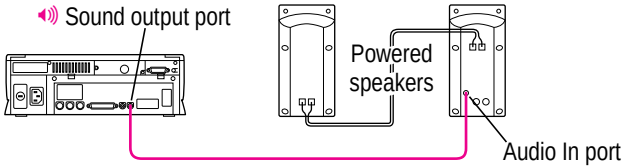
Connecting external stereo speakers

You can take advantage of your computer's stereo sound output by attaching external powered (amplified) speakers.

1 **Assemble the speakers and the cable you need.**

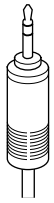
You need a cable with stereo miniplugs at each end to connect one or both speakers to the computer. (Some speakers require a dual-plug adapter. Others, like those shown here, accept a single stereo miniplug and are joined by standard speaker wires.)

The following illustration shows the equipment configuration and the connections for a computer sound system.



2 **Turn off the Macintosh.**

3 **Plug a stereo miniplug into the sound output port on the Macintosh.**



Stereo miniplug

4 **Plug a stereo miniplug into the Audio In port on one of the speakers.**

If the speakers take a dual-plug cable, connect both plugs to the speakers' Audio In ports.

5 **Connect the speakers together with speaker wires, if necessary.**

6 **Turn on the computer.**

You hear the computer's sound through the external speakers.

Note: To control the volume of your external speakers, use the volume button on the front of the computer. If you are playing an audio compact disc (CD), you may also need to adjust the volume control in the program you're using to play CDs. For more information on sound and playing audio CDs, see the "Sound" topic of Macintosh Guide, available in the Guide (?) menu.

Expanding memory

The random-access memory (RAM) in your computer can be expanded. Installing additional RAM adds more memory chips to your computer and expands its capabilities. The *Technical Information* booklet that came with your computer describes how much additional memory can be installed in your Macintosh.

Memory for your computer is provided in packages called Single Inline Memory Modules (SIMMs). The SIMMs must be the correct type for your computer and should be installed in pairs of the same size into paired slots. It is very important that the SIMMs be correctly installed in your Macintosh. Incorrect installation can result in errors, unpredictable results, and damage to your equipment and data.

WARNING To avoid damage to your computer, Apple recommends that only an Apple-certified technician install additional RAM. Consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for service. If you attempt to install additional RAM yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer. See an Apple-authorized dealer or service provider for information about this or any other warranty question.

Installing internal drives

Your Macintosh can hold up to three internal storage devices, including a floppy disk drive, a CD-ROM (compact disc read-only memory) drive, and a hard disk drive (several capacities are available). These drives may already be installed. If you want to add or replace an internal drive, see your Apple-authorized dealer.

Read this chapter for information on installing and using application programs with your computer.

4 Installing and Using Application Programs

Your computer has several application programs already installed, as well as some programs that must installed before you can use them. You will need to run the application program's Installer program before the application programs will work. You'll find these programs on your hard disk.

You may want to experiment with AppleScript, one of the programs on your hard disk. With AppleScript you can automate tasks in the Finder and other scriptable programs (programs that support AppleScript). Instructions for using AppleScript are also included in the AppleScript folder.

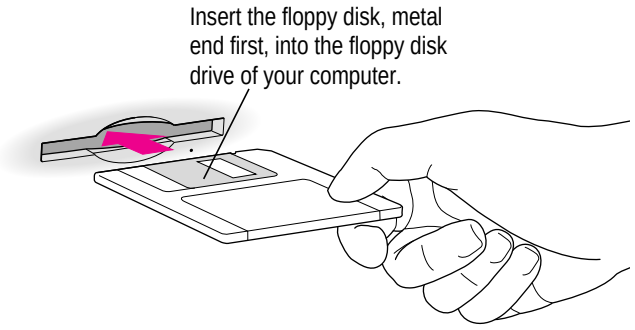
If your computer has enough memory, you can install QuickDraw GX and PowerTalk. QuickDraw GX gives your computer more powerful printing and font capabilities. PowerTalk provides an open collaboration environment with a universal mailbox and other electronic mail services. To install each of these programs, open the folder of the item you want to install and double-click the Installer icon.

Another program, Video Monitor, is for use with computers that have audio-visual (AV) capabilities. For information on using Video Monitor, see the "Video" topic of Macintosh Guide, available in the Guide (?) menu.

Installing application programs

You'll probably want to buy and install additional application programs. See the manuals you receive with your programs for instructions on installing and using them.

In most cases, you'll install an application program on your internal hard disk from floppy disks that contain the program. The following illustration shows how to insert a floppy disk in your computer's floppy disk drive.



To use your programs most effectively, follow these guidelines:

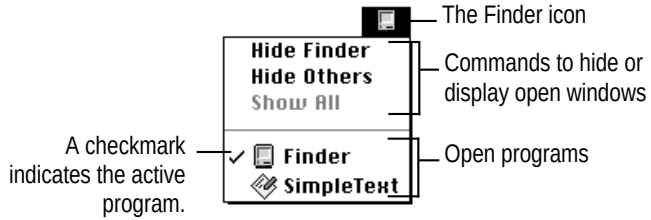
- Put only one copy of each program on your hard disk. Having more than one copy can cause errors.
- Whenever you copy a program disk to your hard disk, be careful not to copy a System Folder. Always check to see what you've copied, and drag any extra System Folders to the Trash.
- If a program malfunctions consistently, try installing a fresh copy. If that doesn't help, find out from the software manufacturer whether your version of the program is compatible with the system software you're using.

For instructions on how to eject floppy disks, see the "Disks" topic of Macintosh Guide, available in the Guide (?) menu.

Working with several programs at a time

You can open as many application programs and desk accessories as your computer's memory allows.

All open programs are listed in the Application menu at the right end of the menu bar. The name of the active program (the one you're using right now) has a checkmark next to it, and its icon appears in the menu bar.



Finding out which programs are open

If you have several programs and windows open, you can find out which program is active and which other programs are open by pulling down the Application menu.

Switching programs

You can switch to another open program or desk accessory by choosing its name from the Application menu.

If a program's icon is dimmed in the menu, that means its windows are hidden. Choosing the program from the Application menu displays its windows.

You can also switch to another program by clicking in a window that belongs to an open program, or by double-clicking a program icon (or the icon of a document that was created with the program).

Hiding and showing windows on the desktop

You can hide all windows except those of the active program by choosing Hide Others from the Application menu.

The other programs remain open even though their windows are hidden. When you switch to another program, its windows become visible again.

If you want to see all the open windows, choose Show All from the Application menu.

Backing up your files

Making backup copies of important files is good protection against possible damage to the originals.

- You can back up files stored on your hard disk by copying them to floppy disks.
- You can back up an entire floppy disk by copying it to another floppy disk, or to a hard disk.
- You can use a commercial backup program to copy new and changed files from a hard disk to another hard disk, to a tape drive, or to a series of floppy disks.
- If your computer is on a network, you can back up files by copying them to a shared disk on the network.

Consult this chapter if you experience problems using your computer.

5 Troubleshooting

When you have questions

If you want to know how to do a particular task with your computer, refer to Macintosh Guide in the Guide (?) menu. For instructions on using Macintosh Guide, see Chapter 2 of this manual.

When you run into trouble

While you're using your computer, you may occasionally see a bomb icon or an error message, or you may have a problem such as the pointer (↖) "freezing" on the screen. If you have trouble with your computer, take a few minutes to read the information in this chapter. If your problem is related to a particular procedure, you should also look for information on that procedure in Macintosh Guide, available in the Guide (?) menu. For additional troubleshooting information and a list of common questions relating to your system software, see the "Troubleshooting" topic of Macintosh Guide.

If you are unable to access Macintosh Guide (for example, if your screen is "frozen"), refer to this chapter to see if you can resolve the problem.

Take your time

When you see an error message, you don't have to take action immediately. The message stays on the screen until you click the OK button or turn off the Macintosh.

To help diagnose and correct the problem, gather as much information on the situation as you can before starting over.

- Make a note of exactly what you were doing when the problem occurred. Write down the message on the screen and its ID number (if any). Also list the programs you were using and the names of any items you know have been added to the System Folder since the system software was installed. This information will help a service person diagnose the problem. (It is helpful to keep a printed copy of the items in your System Folder. For instructions on printing the contents of a folder, see the "Printing & Fonts" topic of Macintosh Guide, available in the Guide [?] menu.)
- Check the screen for any clues. Is a menu selected? What programs and document icons are open? Note anything else that seems relevant.
- If you were typing text and were not able to save it before the problem occurred, you can write down the parts of the text still visible on the screen so that some of your work will be easy to replace.
- Ask other Macintosh users about the problem you're having; they may have a solution for it.

If you need repair service, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

Start over

Often you can eliminate a problem simply by clearing the computer's memory and starting over.

If you can, save any open documents before restarting the Macintosh. If your system is frozen and does not respond to anything you do, or if you have a "bomb" message on the screen, saving may not be possible. You can try pressing ⌘-Option-Esc to quit the program in use when the problem occurred; if this works, you can then save the documents open in other programs before restarting.

To restart your Macintosh, try the following steps:

1. **If you can, choose Restart from the Special menu or from the dialog box that's on the screen.**

   Dialog boxes contain messages from the computer. If something goes wrong, a message may appear on the screen, asking you to restart the computer.

2. **If you can't choose Restart, hold down the ⌘ and Control keys while you press the Power key (marked with a triangle).**

   This key combination restarts the computer. (Use this key combination only when you can't choose Restart from the Special menu.)

3. **If nothing happens, turn off your computer with the standby power button, wait at least 10 seconds, and then turn it on again.**

4. **If the standby power button doesn't turn off the computer, unplug your Macintosh.**

   If you suspect that the problem is with other equipment, such as a printer or an external hard disk that's attached to your computer, turn that equipment off for 10 seconds or longer, then turn it on again and restart the Macintosh.

Rebuild your desktop regularly

A process known as “rebuilding the desktop” helps your Macintosh keep track of data on your startup disks. Although you usually use the hard disk in your computer as a startup disk, you can also start up from any other disk that has system software installed. It’s a good idea to rebuild the desktop of your startup disks once a month or so.

To rebuild the desktop of a startup disk, follow these steps:

1. **Hold down the Option and ⌘ keys while you start up your computer.**

   Do not release the keys until you see a message asking whether you want to rebuild the desktop.

2. **Click OK.**

Solutions to common problems

The computer is turned on but the screen is dark.

One of the following is probably the cause:

- You have a screen saver program that darkens the screen when the computer has not been used for a certain period.

  Press a key or move the mouse to turn off the screen saver.

- The monitor's brightness control (☼) is not adjusted properly.

  Check the monitor's brightness control and turn it up if necessary.

- The Macintosh or the monitor is not getting power.

  If you have a separate monitor, check that the monitor is plugged in and turned on, and that the monitor cable is firmly connected to both the computer and the monitor.

  Check that the computer's power cord is firmly connected to the computer and plugged into a grounded electrical outlet, and that the outlet has power.

  If you have more than one monitor and only one is dark, check that it is set up correctly in the Monitors control panel. For information on using more than one monitor, see the "Monitors" topic of Macintosh Guide, available in the Guide (?) menu.

If you are displaying video from your computer on a television screen, it is normal for your computer monitor to be dark.

The computer's clock keeps time inaccurately.

Your computer has a clock that runs continuously. When the computer is turned off, a battery keeps the clock running. If your clock begins to keep time inaccurately, have your Apple-authorized service provider replace the battery.

When you start up, a disk icon with a blinking question mark appears in the middle of the screen.



This icon indicates that your Macintosh cannot find the system software it needs to start up. One of the following is probably the cause:

- Your computer may be having a problem recognizing external equipment that uses the Small Computer System Interface (SCSI).

  Turn off all external SCSI equipment and disconnect the first SCSI device in the chain from your computer's SCSI port. Then restart the computer. If the computer starts up after you disconnect your SCSI equipment, refer to the manuals that came with the equipment for information on the proper way to connect SCSI equipment and assign SCSI ID numbers.

  If you have a printer connected to your computer's SCSI port, make sure your printer is not supposed to be connected to the printer port instead. Check the manuals that came with your printer for information on how to connect it properly.

- System software is not installed on the startup hard disk, the system software is damaged, or the hard disk is not working properly.

  Start up your computer using the *Disk Tools* floppy disk or (if you have a built-in CD-ROM drive) with the CD-ROM disc that contains system software. (For instructions on how to start up your computer from the CD-ROM disc, see "Starting Up From a CD-ROM Disc" in the section "Initializing a Hard Disk" later in this chapter.) Then follow the instructions in "Repairing a Damaged Disk" later in this chapter to test your startup hard disk and repair any damage.

  If repairing the disk doesn't help, follow the instructions in "Installing or Reinstalling System Software" later in this chapter to reinstall system software on your startup hard disk.

When you try to start up from a floppy disk, a disk icon with an X appears in the middle of the screen and the floppy disk is ejected.



This icon indicates that the floppy disk you tried to start up from is not a startup disk.

Wait a few seconds. The computer should start up from its internal hard disk. Make sure you insert floppy disks only after the computer has begun starting up.

A "sad Macintosh" icon appears and the computer won't start up.



This icon indicates that your Macintosh cannot start up because of a problem with the system software or the computer hardware.

Eject any floppy disks by turning off the computer and then holding down the mouse button while you turn the computer on again. Try starting up with the *Disk Tools* floppy disk or (if you have a built-in CD-ROM drive) with the CD-ROM disc that contains system software. (For instructions on how to start up your computer from the CD-ROM disc, see "Starting Up From a CD-ROM Disc" in the section "Initializing a Hard Disk" later in this chapter.) If the "sad Macintosh" icon appears again, consult the service and support information that came with your computer for information on contacting an Apple-authorized service provider or Apple for assistance.

The hard disk icon does not appear on the desktop.

If you don't see a hard disk icon on the desktop, try the following:

- If the hard disk is internal, shut down your computer, wait at least 10 seconds, and then turn it on again.
- If the hard disk is external, make sure that it is turned on and that its cable is connected firmly; then restart the Macintosh.

- Check the ID numbers of all SCSI equipment connected to your computer. See the manuals that came with your SCSI equipment for information on setting SCSI ID numbers.
- If the hard disk is your startup disk, start your computer using the *Disk Tools* floppy disk or (if you have a built-in CD-ROM drive) with the CD-ROM disc that contains system software. (For instructions on how to start up your computer from the CD-ROM disc, see "Starting Up From a CD-ROM Disc" in the section "Initializing a Hard Disk" later in this chapter.) Then follow the instructions in "Repairing a Damaged Disk" later in this chapter to test your startup hard disk and repair any damage.

  If repairing the disk doesn't help, follow the instructions in "Installing or Reinstalling System Software" later in this chapter to reinstall system software on your startup hard disk.

Icons do not appear correctly on your screen.

You need to rebuild the desktop—a process that helps your Macintosh keep track of files and folders on your hard disks. For instructions, see "Rebuild Your Desktop Regularly" in the section "When You Run Into Trouble" earlier in this chapter.

If icons do not appear correctly after you rebuild the desktop, restart your computer while pressing the Shift key to temporarily turn off system extensions. When you see the "Welcome to Macintosh—extensions off" message, release the Shift key and press the Option and ⌘ keys until you see a message asking if you want to rebuild the desktop.

Your Macintosh can't read a floppy disk.

If you see a message that a floppy disk is unreadable, try one of the following:

- If the disk has never been used, you may simply need to initialize it. For instructions, see the "Disks" topic of Macintosh Guide, available in in the Guide (?) menu.
- The disk may be damaged. See "Repairing a Damaged Disk" later in this chapter for information on testing and repairing disks.

If you are trying to use a DOS disk, consider the following:

- The disk may have been formatted incorrectly on a DOS computer. On DOS computers it's possible to format a standard double-sided disk in a high-density (1440K) format, and vice versa. Disks formatted in this way cannot be read by a Macintosh computer.

  When formatting disks on a DOS computer, always format standard double-sided disks in the 720K format. Always format high-density disks in the 1440K format.

  If a disk has been formatted incorrectly, use a DOS computer to copy its contents onto another disk that has been properly formatted.

The pointer (↖) freezes on the screen.

Your system has a software problem.

- Press ⌘-Option-Esc to quit the application program in use when the problem occurred. If this works, you can save the documents open in other programs before restarting.
- Restart your Macintosh. (For instructions, see "Start Over" in the section "When You Run Into Trouble" earlier in this chapter.) Most software problems are temporary, and restarting usually corrects the problem.
- Check the startup disk and program you were using when the problem occurred. Make sure that all programs, desk accessories, and system extensions you're using are compatible with the system software.
- Sometimes incompatible system extensions or control panels can cause system software problems. Restart while holding down the Shift key; this temporarily turns off all system extensions. If your computer works normally after you do this, remove all extensions from the Extensions folder (inside the System Folder) and put them back into the Extensions folder one at a time. Restart after you add each extension. This procedure should identify any incompatible extensions.

  You can also use the Extensions Manager control panel to turn off individual extensions. For information on using this control panel to manage system extensions, see the "Setting Options" topic of Macintosh Guide, available in the Guide (?) menu.
- If the problem recurs, you may need to reinstall system software. See "Installing or Reinstalling System Software" later in this chapter for instructions.

A dialog box with a bomb appears.

Your system has a software problem.

- Write down what you were doing when the message appeared, the text of the message, and the message number, if there is one.
- Restart your Macintosh. (See “Start Over” in the section “When You Run Into Trouble” earlier in this chapter for instructions.) Most software problems are temporary, and restarting usually corrects the problem.
- Check the startup disk and application program you were using when the dialog box appeared. Make sure that all programs, desk accessories, and system extensions you’re using are compatible with the system software. Reinstalling the system software may correct the problem.
- Sometimes incompatible system extensions or control panels can cause system software problems. Restart while holding down the Shift key; this temporarily turns off all system extensions. If your computer works normally after you do this, remove all extensions from the Extensions folder (inside the System Folder) and put them back into the Extensions folder one at a time. Restart after you add each extension. This procedure should identify any incompatible extensions.

  You can also use the Extensions Manager control panel to turn off individual extensions. For information on using this control panel to manage system extensions, see the “Setting Options” topic of Macintosh Guide, available in the Guide (?) menu.
- If the problem recurs, you may need to reinstall system software. See “Installing or Reinstalling System Software” later in this chapter for instructions.

The pointer (↖) doesn’t move when you move the mouse.

One of the following situations is probably the cause:

- Your system has a software problem.

  Press ⌘-Option-Esc to quit the application program in use when the problem occurred. If this works, you can save the documents open in other programs before restarting.

  Restart your Macintosh. See “Start Over” in the section “When You Run Into Trouble” earlier in this chapter for instructions.

Check the startup disk and program you were using when the problem occurred. Make sure that all programs, desk accessories, and system extensions you're using are compatible with the system software. Try starting up the computer from the *Disk Tools* disk or the CD-ROM disc that contains system software. (For instructions on how to start up your computer from the CD-ROM disc, see "Starting Up From a CD-ROM Disc" in the section "Initializing a Hard Disk" later in this chapter.) If your computer starts up normally, there may be an extension conflict.

If the problem recurs, you may need to reinstall system software. See "Installing or Reinstalling System Software" later in this chapter for instructions.

- The mouse is not connected properly.

  Turn the computer off using the standby power button, check that the mouse and keyboard cables are connected properly, and then restart the computer.

- Signals from the mouse are not reaching the computer, either because the mouse needs cleaning or because there is something wrong with the mouse.

  Clean the mouse according to the instructions in Appendix A of this book.

  If you have another mouse or pointing device, try connecting and using it. (Turn off the computer before connecting it.) If the new device works, there is probably something wrong with the mouse you replaced.

If none of these procedures solves the problem, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

Typing on the keyboard produces nothing on the screen.

One of the following is probably the cause:

- Your system has a software problem.

  Restart your Macintosh. For instructions, see "Start Over" in the section "When You Run Into Trouble" earlier in this chapter.

  Check the startup disk and application program you were using when the problem occurred. Make sure that all programs, desk accessories, and system extensions you're using are compatible with the system software.

If the problem recurs, you may need to reinstall system software. See "Installing or Reinstalling System Software" later in this chapter for instructions.

- You haven't selected any text or set the insertion point (I).

  Make sure the program you want to type in is the active program. Then place the pointer (↖) in the active window and click to set an insertion point (I) or drag to select text (if you want to replace the text with your typing).

- The keyboard is not connected properly.

  Turn off the computer using the standby power button, then check that the keyboard cable is connected properly at both ends.

  If you have a keyboard with an ADB port (marked with the ⌘ icon) on each end, turn off the Macintosh using the standby power button and plug the keyboard cable into the other ADB port on the keyboard. (You may have to unplug the mouse to do this.) Then restart the computer.

  Many Macintosh computers have two ADB ports on the back panel. Also, some monitors have one or two ADB ports. Turn off the Macintosh using the standby power button and connect your keyboard cable to a different ADB port on the computer or monitor. Then restart the computer.

- The keyboard is damaged.

  If you have access to another keyboard, try using it instead. (Turn the computer off before connecting it.) If the new keyboard works, there is probably something wrong with the one you replaced.

If none of these procedures solves the problem, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

You can't start an application program or it quits unexpectedly. Or, when you try to open a program, you see a message that not enough memory is available.

One of the following is probably the cause:

- The Macintosh ran out of memory.

  Quit the programs that you have open and then open the program you want to use, or restart your Macintosh.

  Use the Memory control panel to turn on virtual memory. For more information on virtual memory, see the "Memory" topic of Macintosh Guide, available in the Guide (?) menu.

- The program needs more memory.

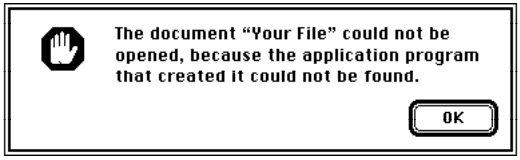
  Use the program's Info window to give it more memory. For more information on increasing a program's memory, see the "Memory" topic of Macintosh Guide, available in the Guide (?) menu.

- The program requires special hardware, such as a floating-point unit (FPU), and your computer doesn't have the hardware installed.

  Check the documentation that came with the program to find out if the program requires a Macintosh with special hardware, such as an FPU. Then check the *Technical Information* booklet that came with your Macintosh to find out if your computer is equipped with such special hardware, or if the hardware can be installed. Consult your Apple-authorized service provider for information on installing special hardware in your computer.

You see a message that an application program can't be found.

The following dialog box appears if you try to open a document that was created with software that is not on your hard disk.



Normally, you see this message if you try to open a document that came from another Macintosh with software that is different from yours.

- Some documents can be opened by more than one application program. Try starting a program that you think might be able to open the document, then choose Open from the program's File menu to try to open the document.
- Purchase and install the correct software to use the document, or find out if the creator of the document can convert it to a form that one of your programs can use.
- Don't try to open the files in your System Folder. Most of the files in your System Folder are used by your computer for internal purposes and are not intended to be opened.
- Rebuild your desktop by holding down the Option and ⌘ keys while starting up your computer. Keep holding down the keys until you see a message asking whether you want to rebuild the desktop. Click OK.
- If the document is from a DOS computer, use the PC Exchange control panel to specify which Macintosh program will open the document. For information about working with DOS documents on your Macintosh, see the "Using DOS Files & Disks" topic of Macintosh Guide, available in the Guide (?) menu.

You experience problems using a document from a DOS computer.

If you can't open a DOS document using a Macintosh program, try the following:

- Open the document from within the program by choosing Open in the program's File menu.
- Use the PC Exchange control panel to change the document's type to one that can be opened by the program.

If a DOS document is displayed incorrectly, or you see strange codes or characters in the document, try one of the following:

- Your application program may have special procedures for opening and saving documents with different file formats. See the information that came with your program.
- Try opening the document in another program.

Note: Some characters that can be displayed on the Macintosh are not accurately displayed on DOS computers.

For more information about working with DOS documents on your Macintosh, see the "Using DOS Files & Disks" topic of Macintosh Guide, available in the Guide (?) menu.

Initializing a hard disk

Before you can use a new disk, the disk must be prepared so that the computer knows where to store information on the disk. This preparation is called *initializing* (or *formatting*) the disk.

When do you need to initialize a hard disk?

The hard disk inside your computer was initialized at the factory, so you shouldn't need to initialize it. You need to initialize a hard disk only if

- you purchase a hard disk that has not been initialized at the factory
- your hard disk is damaged

If a hard disk needs to be initialized, the disk's icon does not appear on the desktop when you start up the computer using another disk.

WARNING Initializing a disk erases any information that may be on it. Before you initialize a damaged disk, try to repair it as described in "Repairing a Damaged Disk" later in this chapter.

Starting up from a CD-ROM disc

To initialize, test, or repair a hard disk, or to install system software on a hard disk, you need to start up your computer from another disk. If your computer has a CD-ROM drive, you can start up your computer using the CD-ROM disc containing system software that came with the computer.

To start up the computer using the CD-ROM disc, follow these steps:

1. **Turn your computer on.**
2. **Press the Open/Close button on your CD-ROM drive, and quickly insert the CD-ROM disc containing system software into the drive.**
3. **Immediately press the C key on your keyboard.**

Continue to hold down the key until you see the "Welcome to Macintosh" message.

If a blinking question mark appears, or if the computer starts up from your hard disk: You did not insert the CD-ROM disc quickly enough for the computer to recognize it as a startup disk. Follow these steps:

1. **Shut down your computer.**

   The CD-ROM disc will remain in the CD-ROM drive.

2. **Turn the computer on.**

3. **Immediately press the C key on the keyboard.**

   Continue to hold down the key until you see the "Welcome to Macintosh" message.

Starting up from a floppy disk

To initialize, test, or repair a hard disk, or to install system software on a hard disk, you need to start up your computer from another disk. If you don't have a built-in CD-ROM drive, you can start up the computer using either the *Disk Tools* or *Install Disk 1* floppy disk that came with your computer.

To start up your computer using a floppy disk, follow these steps:

1. **Shut down your computer.**

2. **Insert the floppy disk into the disk drive.**

   If you want to initialize, test, or repair your hard disk, use the *Disk Tools* disk to start up your computer. If you want to install system software, use the *Install Disk 1* disk.

3. **Turn the computer on.**

Reinitializing your computer's internal hard disk

You initialize your internal hard disk using a program called Internal HD Format, which is on the floppy disk labeled *Disk Tools* that came with your computer. If your computer came with a CD-ROM drive and you didn't receive floppy disks, you can find Internal HD Format on the CD-ROM disc that contains system software.

1. **Start up your computer from the *Disk Tools* disk or the CD-ROM disc that contains system software.**

   See "Starting Up From a CD-ROM Disc" or "Starting Up From a Floppy Disk" earlier in this section.

2. **Double-click the Internal HD Format icon to open it.**

   You may need to look in a folder called Utilities to find Internal HD Format.

3. **Type a name for your disk in the name box.**

4. **If you want to make sure that none of the hard disk's original information is recognizable after reinitialization, choose Zero Data in the Options menu.**

   If you choose Zero Data, initialization may take a few minutes. (If you don't choose Zero Data, initialization will take less than 30 seconds.)

5. **Click Initialize.**

   A message informs you that initializing the disk erases all information on it.

6. **Click OK.**

   During initialization, a status bar shows you the progress of the initialization.

7. **When the initialization is complete, click Done.**

   If a message reports that initialization failed, try again. If initialization fails a second time, take the disk to your Apple-authorized service provider for repair.

Initializing an external SCSI hard disk

You initialize an Apple external SCSI hard disk using a program called Apple HD SC Setup, which is on the floppy disk labeled *Disk Tools* that came with your computer. If your computer came with a CD-ROM drive and you didn't receive floppy disks, you can find Apple HD SC Setup on the CD-ROM disc that contains system software.

1 **Start up your computer from the *Disk Tools* disk or the CD-ROM disc that contains system software.**

See "Starting Up From a CD-ROM Disc" or "Starting Up From a Floppy Disk" earlier in this section.

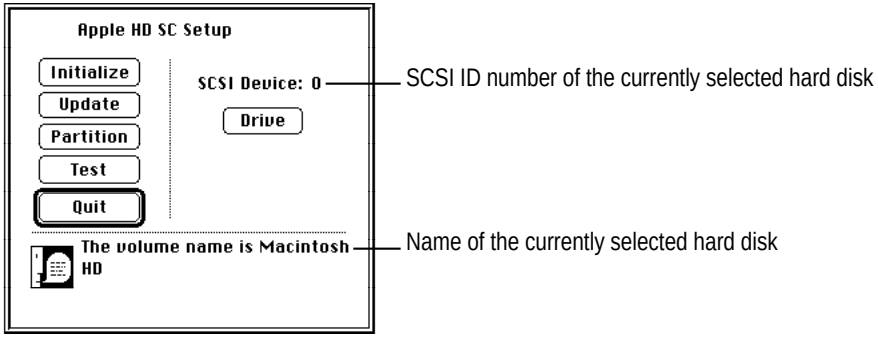
2 **Open the Apple HD SC Setup icon.**

You may need to look in a folder called Utilities to find Apple HD SC Setup.



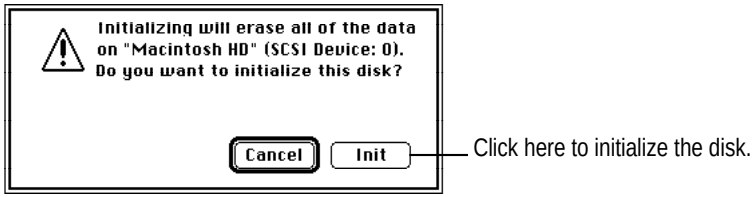
3 **Click Drive until the disk you want to initialize appears.**

You cannot initialize the disk that you used to start up your computer or the disk that contains the Apple HD SC Setup program.



4 **Click Initialize.**

5 **Click Init to initialize the hard disk.**



6 **If a message appears asking you to name the disk, type a name and then click OK.**

7 **Click Quit when you see a message reporting that initialization was successful.**

If a message reports that initialization failed, try again. If initialization fails a second time, take the disk to your Apple-authorized service provider for repair.

Repairing a damaged disk

Disks can become damaged by repeated use and handling.

When do you need to repair a disk?

If you see a message reporting that a disk is damaged or unreadable, you may need to repair the disk.

Try these suggestions first

If you can't start up from a hard disk or you don't see the hard disk icon on the desktop, try the following:

- If the hard disk is internal, shut down your Macintosh, wait at least 10 seconds, and then turn it on again.
- If the hard disk is external, make sure that it is turned on and that its cable is connected firmly; then restart the Macintosh.
- If the hard disk is your startup disk, start up with a different startup disk. If the hard disk's icon appears on your desktop, reinstall system software on the hard disk (see "Installing or Reinstalling System Software" later in this chapter).
- Check the ID numbers of all SCSI equipment connected to your computer. Each device must have a unique ID number (the computer itself has the ID number 7). Also check that the chain of devices is terminated properly. For information on setting SCSI ID numbers and terminating a SCSI chain, see the manuals that came with your SCSI equipment.
- Test the disk following the instructions that come next.

Checking for damage on your internal hard disk

You can check for damage on your internal hard disk with the Internal HD Format program, which is on the floppy disk labeled *Disk Tools* that came with your computer. If your computer has a built-in CD-ROM drive and you didn't receive floppy disks, you can find the Internal HD Format program on the CD-ROM disc that contains system software. You can use Internal HD Format at any time to check for damaged blocks (segments of the hard disk that cannot reliably be used to store information).

1 **Start up your computer from the *Disk Tools* disk or the CD-ROM disc that contains system software.**

See "Starting Up From a CD-ROM Disc" or "Starting Up From a Floppy Disk" in the section "Initializing a Hard Disk" earlier in this chapter.

2 **Open the Internal HD Format icon.**

You may need to look in a folder called Utilities to find Internal HD Format.

3 **Choose Scan All Blocks in the Functions menu.**

If the program finds damaged blocks, it marks them so the computer will not store information in them. This process does not harm any information on the hard disk.

Testing an external SCSI hard disk

You can test an external Apple SCSI hard disk with the Apple HD SC Setup program, which is on the floppy disk labeled *Disk Tools* that came with your computer. If your computer has a built-in CD-ROM drive, and you didn't receive floppy disks, you can find the Apple HD SC Setup program on the CD-ROM disc that contains system software.

1 **Start up your computer from the *Disk Tools* disk or the CD-ROM disc that contains system software.**

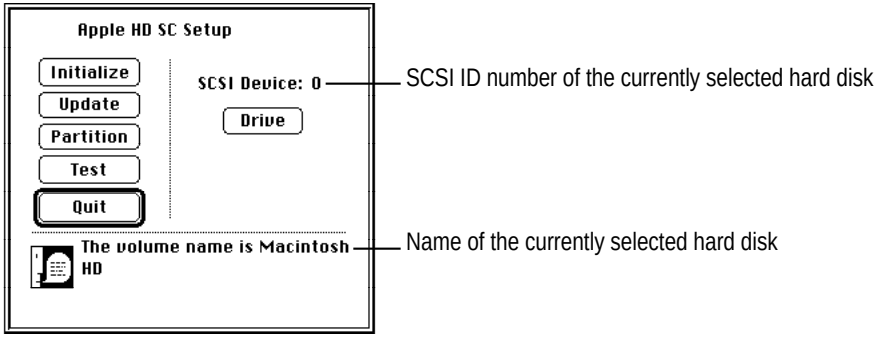
See "Starting Up From a CD-ROM Disc" or "Starting Up From a Floppy Disk" in the section "Initializing a Hard Disk" earlier in this chapter.

2 **Open the Apple HD SC Setup icon.**

You may need to look in a folder called Utilities to find Apple HD SC Setup.



3 **Click Drive until the disk you want appears.**



4 **Click Test.**

5 **When a message tells you that testing is complete, click Quit.**

If the test reveals a problem, you may be able to correct it by using Disk First Aid or another disk repair program (see the instructions in the next section), or you may need to reinitialize the disk (see “Initializing a Hard Disk” earlier in this chapter). Consult an Apple-authorized service provider for assistance, if necessary.

How to repair a hard disk or floppy disk

You can repair some types of disk damage by using the Disk First Aid program, which is included either on the *Disk Tools* floppy disk or on the CD-ROM disc containing system software that came with your computer.

1 **Start up your computer from the *Disk Tools* disk or the CD-ROM disc that contains system software.**

See “Starting Up From a CD-ROM Disc” or “Starting Up From a Floppy Disk” in the section “Initializing a Hard Disk” earlier in this chapter.

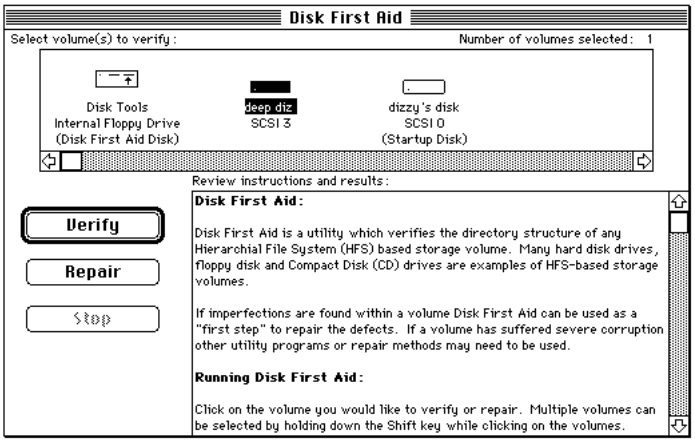
2 **Open the Disk First Aid icon.**

You may need to look in a folder called Utilities to find Disk First Aid.



3 **Click the icon of the disk you want to test.**

Disk icons appear in a box at the top of the Disk First Aid window.



4 **Click Repair to begin testing and repairing the disk.**

You can't repair the startup disk or the disk that contains the Disk First Aid program, but you can test these disks by clicking Verify. If the program reveals a problem with either of these disks, start up the computer from another disk so that you can repair the damaged disk.

If you want to test and repair another disk, click its icon and then click Repair.

5 **When testing and repair are finished, choose Quit from the File menu.**

If Disk First Aid cannot correct the problem

- Try repairing the disk again. Sometimes repeating the process corrects the problem.
- Use another disk repair or recovery program. Some disk repair programs let you recover information from a damaged disk.
- Consult a computer repair specialist for help.
- Once you have recovered all the information you can, erase (reinitialize) the disk. If initialization doesn't work, discard the damaged disk (if it's a floppy disk), or take it to your Apple-authorized service provider for repair (if it's a hard disk).

Installing or reinstalling system software

System software is the set of programs and other files that your computer uses to start itself up, keep track of your files, and run the application programs you use. System software is kept in the folder called the System Folder. When you turn on your computer, it looks for a startup disk, which is a disk that contains the system software. The startup disk is usually the hard disk that's inside your computer, though another hard disk or a floppy disk can also be a startup disk.

The accessory kit that came with your Macintosh provides system software on either a set of floppy disks or a CD-ROM disc. You can use the floppy disks or the CD-ROM disc to install the system software on your Macintosh if you need to do so.

When should you install system software?

Your Macintosh came with all the necessary system software installed on its internal hard disk, so you don't need to install system software on that disk unless you encounter software problems.

If you have a new hard disk or a newly initialized hard disk that doesn't contain system software, or if you want to upgrade to a more recent version of system software on a hard disk, follow the instructions in "Installing System Software" later in this chapter.

When should you reinstall system software?

If you have a problem with your system software, you may see this icon in the middle of the screen:



If this icon appears, follow the instructions in "Repairing a Damaged Disk" earlier in this chapter to test your startup hard disk and repair any damage.

If repairing the disk doesn't help, follow the instructions in the next section, "Installing System Software," to reinstall system software on your startup hard disk.

Installing system software

Follow the steps in this section to do what is commonly called a “normal” installation of system software.

If you’re installing system software on a hard disk for the first time, make sure that your hard disk has been initialized, a process that prepares the disk to store information. If you see the hard disk’s icon on the desktop when you start up the computer, the disk has been initialized. If no disk icon appears when you start up, see “Initializing a Hard Disk” earlier in this chapter for instructions.

To do a normal installation, follow these steps:

1 **Start up your computer from the *Disk Tools* disk or the CD-ROM disc that contains system software.**

See “Starting Up From a CD-ROM Disc” or “Starting Up From a Floppy Disk” in the section “Initializing a Hard Disk” earlier in this chapter.

2 **Find and open the Disk First Aid icon.**

You may need to look in a folder called Utilities to find Disk First Aid.



After Disk First Aid starts, follow the instructions on the screen. Disk First Aid checks your hard disk for any problems.

3 **When Disk First Aid has finished checking your hard disk, choose Quit from the File menu.**

4 **Shut down your computer.**

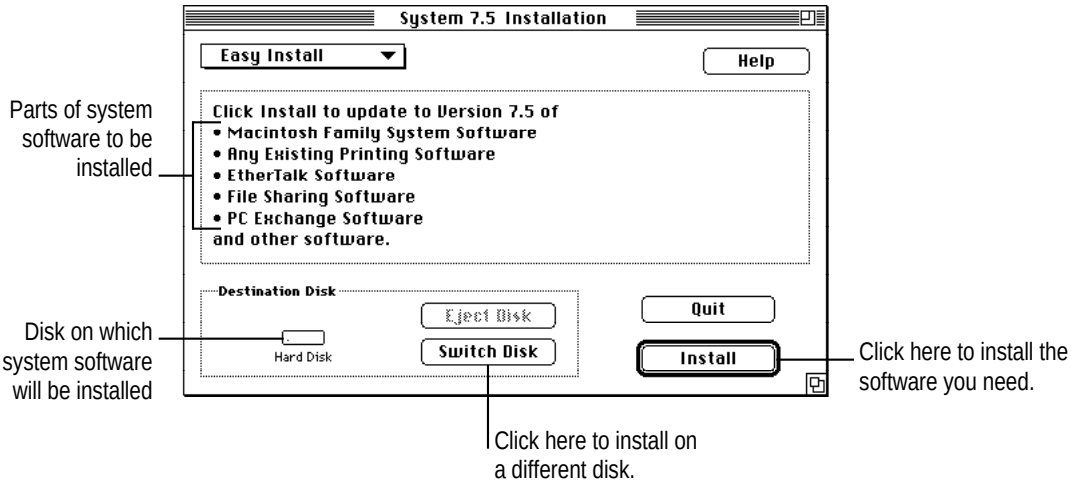
5 **Start up your computer from the *Install Disk 1* disk or the CD-ROM disc that contains system software.**

See “Starting Up From a CD-ROM Disc” or “Starting Up From a Floppy Disk” in the section “Initializing a Hard Disk” earlier in this chapter.

The Installer’s Welcome screen appears. You may have to double-click the System Software Installer icon to open the Installer program.

6 **Click OK.**

The Easy Install dialog box appears.



7 **Make sure that the hard disk named in the box is the one on which you want to install system software.**

If it isn’t, click Switch Disk until the correct disk name appears.

8 **Click Install.**

9 **Follow the instructions that appear on the screen.**

If you’re installing system software from floppy disks, you see messages asking you to insert different disks.

10 **When you see a message reporting that the installation was successful, click Restart.**

If a message reports that installation was not successful, try installing again. (Follow the instructions on the screen.)

If, after reinstalling system software by doing a normal installation, you still experience problems with your computer, follow the steps in the next section for doing a “clean” installation of system software.

IMPORTANT Certain system extensions or application programs that were originally on your hard disk may not be installed with the Installer program. If you notice that a certain extension or program was not installed, you may need to install it separately. You can find these additional extensions and programs on the CD-ROM disc that contains system software. If you don’t have a CD-ROM drive, see the service and support information that came with your computer for information on how to contact Apple directly for assistance.

Doing a clean installation of system software

The steps in this section outline what is commonly called a “clean” installation of system software. Do a clean installation if you can’t determine what is damaged in your System Folder (especially if you think any special software, such as control panels, system extensions, or custom utilities, may be causing the problems you’re experiencing). You should also do a clean installation if you’re still having problems with your computer after you’ve reinstalled system software by doing a normal installation.

Testing your hard disk

To prepare your hard disk for a clean installation, follow these steps:

1. **Start up your computer from the *Disk Tools* disk or the CD-ROM disc that contains system software.**

   See “Starting Up From a CD-ROM Disc” or “Starting Up From a Floppy Disk” in the section “Initializing a Hard Disk” earlier in this chapter.

2. **Find and open the Disk First Aid icon.**

   You may need to look in a folder called Utilities to find Disk First Aid.



   After Disk First Aid starts, follow the instructions on the screen. Disk First Aid checks your hard disk for any problems.

3. **When Disk First Aid has finished checking your hard disk, choose Quit from the File menu.**

Preparing an external SCSI hard disk for reinstallation of system software

If you’re reinstalling system software on an Apple external SCSI hard disk, follow these additional steps. If you’re reinstalling system software on your internal hard disk, skip to the next section, “Installing New System Software.”

1. **Find and open the Apple HD SC Setup icon.**

   You may need to look in a folder called Utilities to find Apple HD SC Setup.



2. **Click Drive until the disk on which you want to reinstall system software appears.**
3. **Click Update and follow the instructions on the screen.**
4. **When you see a message that the update (preparation for reinstalling system software) was successful, click Quit.**

The external SCSI hard disk is now prepared for reinstalling system software, and you can proceed with the installation.

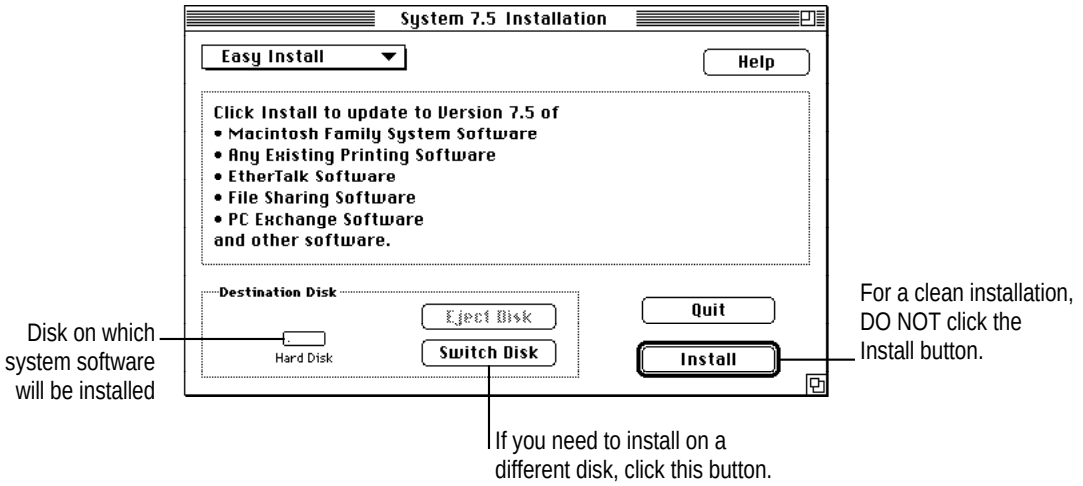
Installing new system software

1 **Insert the *Install Disk 1* disk into the floppy disk drive, or insert the CD-ROM disc that contains system software into the CD-ROM drive.**

The Installer's Welcome screen appears. You may have to double-click the System Software Installer icon to open the Installer program.

2 **Click Continue.**

The Easy Install dialog box appears.



3 **Make sure that the hard disk named in the Destination Disk box is the one on which you want to install system software.**

If it isn't, click Switch Disk until the correct disk name appears.

4 **Hold down Shift–⌘–K to start the clean installation.**

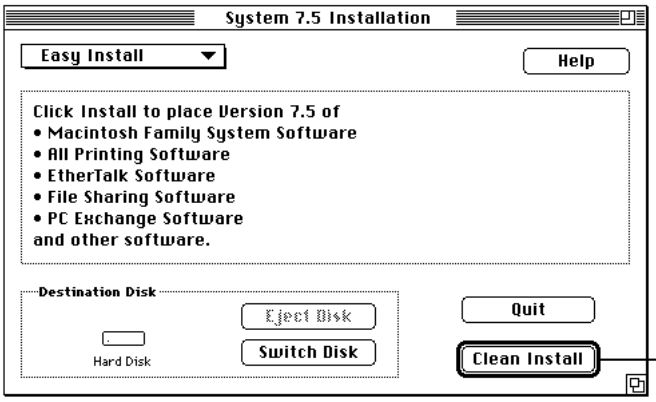
The following dialog box appears.



5 **Click the Install New System Folder button and click OK.**

The Easy Install dialog box appears. The Install button has changed to Clean Install, and the contents of your old System Folder have been moved to a new folder named Previous System Folder.

6 **Click Clean Install.**



7 **Follow the instructions that appear on the screen.**

It takes a few minutes to complete the installation.

8 **When you see a message reporting that the installation was successful, you may need to click Restart.**

You need to click Restart only if you installed software onto the startup disk.

If a message reports that installation was not successful, try repeating the clean installation procedure.

Replacing special software

1 **Copy any special software items from the Previous System Folder back to your System Folder one item at a time, restarting the computer after copying each item.**

Special software consists of items such as control panels, system extensions, or custom utilities that you may have added to your System Folder.

IMPORTANT Be very careful not to *replace* (copy over) any of the files in the System Folder with files from the Previous System Folder.

2 **Check after each restart to make sure your computer is not having any software problems.**

If any of your special software items causes software problems, contact the software's manufacturer for assistance or an upgrade.

Doing a custom installation

For most Macintosh users, the Easy Install procedure described in the previous sections is appropriate, because it automatically installs all the items you need. However, if you'd like to select a combination of system software files for your specific needs, you can customize your system software installation. You use custom installation to install or update one or more specific files, or to save space on your hard disk by installing only the files you want.

To install customized system software, follow these steps:

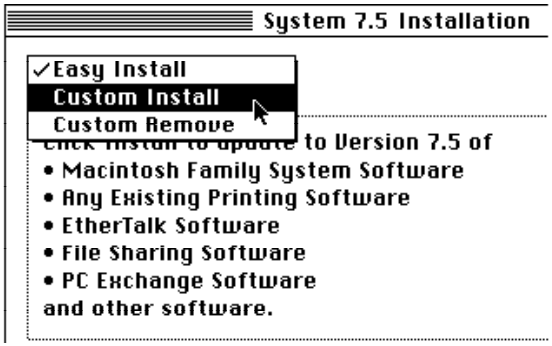
1 **Insert the *Install Disk 1* disk into the floppy disk drive, or insert the CD-ROM disc that contains system software into the CD-ROM drive.**

The Installer's Welcome screen appears. You may have to double-click the System Software Installer icon to open the Installer program.

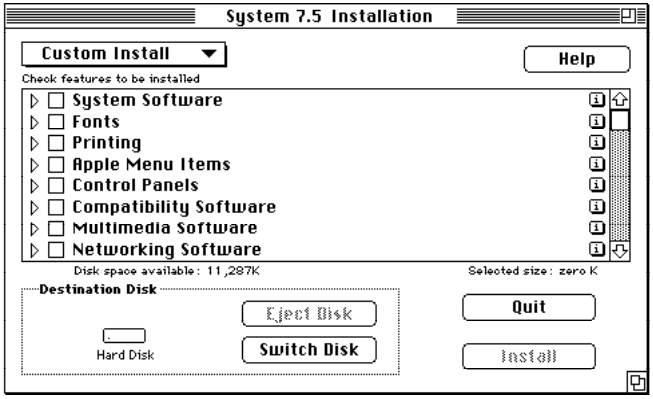
2 **Click OK.**

The Easy Install dialog box appears.

3 **Choose Custom Install from the pop-up menu.**



The Custom Install dialog box appears, listing all available system software components.



4 **Scroll through the list of components, clicking the checkbox next to each component you want to install.**

To get additional information about a component, click the box with the letter *i* in it to the right of the component.

5 **Click Install.**

6 **Follow the instructions that appear on the screen.**

7 **When you see a message reporting that the installation was successful, click Quit.**

If a message reports that installation was not successful, try installing again. (Follow the instructions on the screen.)

8 **Restart your Macintosh.**

The system software is installed and your computer is ready to use.

Read this appendix for important health and safety instructions, as well as tips on keeping your computer in good working order.

Appendix A
Health, Safety, and Maintenance Tips

For your own safety and that of your equipment, follow all the instructions in this chapter. Keep these instructions available for reference by you and others.

Health-related information about computer use

Muscle soreness, eye fatigue, and other discomforts and injuries sometimes associated with using computers can occur from performing any number of activities. In fact, misuse of the same muscles during multiple activities can create a problem that might not otherwise exist. For example, if you engage in nonwork activities that involve repetitive stress on the wrist—such as bicycling—and also use your computer's keyboard improperly, you may increase your likelihood of developing wrist problems. Some individuals are at greater risk of developing these problems because of their health, physiology, lifestyle, and general exposure to stress. Work organization and conditions, such as workstation setup and lighting, also play a part in your overall health and comfort. Preventing health problems is a multifaceted task that requires careful attention to the way you use your body every hour of every day.

The most common health effects associated with using a computer are musculoskeletal discomfort and eye fatigue. We'll discuss each area of concern below.

Musculoskeletal discomfort

As with any activity that involves sitting for long periods of time, using a computer can make your muscles sore and stiff. To minimize these effects, set up your work environment carefully, using the guidelines that follow, and take frequent breaks to rest tired muscles. To make working with your computer more comfortable, allow enough space in your work area so that you can change position frequently and maintain a relaxed posture.

Another type of musculoskeletal concern is repetitive stress injuries (RSIs), also known as cumulative trauma disorders (CTDs). These problems can occur when a certain muscle or tendon is repeatedly overused and forced into an unnatural position. The exact causes of RSIs are not totally understood, but in addition to awkward posture, such factors as the amount of repetition, the force used in the activity, the individual's physiology, workplace stress level, and lifestyle may affect the likelihood of experiencing an RSI.

RSIs did not suddenly arise when computers were invented; tennis elbow and writer's cramp, for example, are two RSIs that have been with us for a long time. Although less common than other RSIs, one serious RSI discussed more often today is a wrist problem called carpal tunnel syndrome, which may be aggravated by improper use of computer keyboards. This nerve disorder results from excessive pressure on the median nerve as it passes through the wrist to the hand.

This section offers advice on setting up your work area to enhance your comfort while you use your computer. Since the effects of repetitive movements associated with using a computer can be compounded by those of other work and leisure activities to produce or aggravate physical problems, proper use of your computer system must be considered as just one element of a healthy lifestyle.

No one, of course, can guarantee that you won't have problems even when you follow the most expert advice on using computer equipment. You should always check with a qualified health specialist if muscle, joint, or eye problems occur.

Eye fatigue

Eye fatigue can occur whenever the eyes are focused on a nearby object for a long time. This problem occurs because the eye muscles must work harder to view an object that's closer than about 20 feet (6 meters). Improper lighting can hasten the development of eye fatigue. Although eye fatigue is annoying, there's no evidence that it leads to permanent damage.

Whenever you're engaged in an activity that involves close-up work—such as reading a magazine, doing craft work, or using a computer—be sure to have sufficient glare-free lighting and give your eyes frequent rest breaks by looking up and focusing on distant objects. Remember to have your eyes examined regularly.

To prevent discomfort and eye fatigue:

- Arrange your workspace so that the furniture is properly adjusted for you and doesn't contribute to an awkward working posture.
- Take frequent short breaks to give your muscles and eyes a chance to rest.

Arranging your office

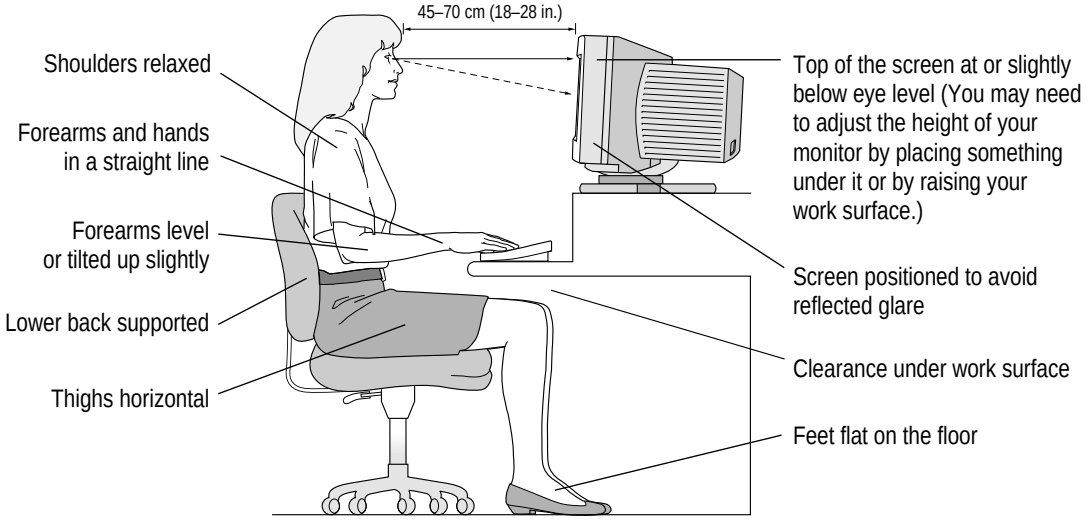
Here are some guidelines for adjusting the furniture in your office to accommodate your physical size and shape.

- An adjustable chair that provides firm, comfortable support is best. Adjust the height of the chair so your thighs are horizontal and your feet flat on the floor.

  The back of the chair should support your lower back (lumbar region). Follow the manufacturer's instructions for adjusting the backrest to fit your body properly.
- When you use the computer keyboard, your shoulders should be relaxed. Your upper arm and forearm should form an approximate right angle, with your wrist and hand in roughly a straight line.

You may have to raise your chair so your forearms and hands are at the proper angle to the keyboard. If this makes it impossible to rest your feet flat on the floor, you can use a footrest with adjustable height and tilt to make up for any gap between the floor and your feet. Or you may lower the desktop to eliminate the need for a footrest. Another option is to use a desk with a keyboard tray that's lower than the regular work surface.

- Position the mouse at the same height as your keyboard. Allow adequate space to use the mouse comfortably.
- Arrange the monitor so the top of the screen is slightly below your eye level when you're sitting at the keyboard. The best distance from your eyes to the screen is up to you, although most people seem to prefer 18 to 28 inches (45 to 70 cm).
- Position the monitor to minimize glare and reflections on the screen from overhead lights and windows. You may want to use a tiltable monitor stand. The stand lets you set the monitor at the best angle for viewing, helping to reduce or eliminate glare from lighting sources you can't move.



Avoiding fatigue

- Change your seated position, stand up, or stretch whenever you start to feel tired. Frequent short breaks are helpful in reducing fatigue.
- Use a light touch when typing or using a mouse and keep your hands and fingers relaxed.
- Some computer users may develop discomfort in their hands, wrists, or arms after intensive work without breaks. If you begin to develop chronic pain or discomfort in your hands, wrists, or arms, consult a qualified health specialist.
- Allow adequate work space so that you can use your keyboard and mouse comfortably. Place papers or other items so you can view them easily while using your computer. A document stand may make reading papers more comfortable.
- Eye muscles must work harder to focus on nearby objects. Occasionally focus your eyes on a distant object, and blink often while you work.
- Clean your screen regularly. Keeping the screen clean helps reduce unwanted reflections.

What about electromagnetic emissions?

There has been recent public discussion of the possible health effects of prolonged exposure to extremely low frequency (ELF) and very low frequency (VLF) electromagnetic fields. Such fields are associated with electromagnetic sources such as television sets, electrical wiring, and some household appliances—as well as computer monitors.

Apple has reviewed scientific reports and sought the counsel of government regulatory agencies and respected health organizations. Based on the prevailing evidence and opinions, Apple believes that the electric and magnetic fields produced by computer monitors do not pose a health risk.

In response to those customers who wish to reduce their exposure to electromagnetic fields, Apple has lowered the emission levels of our products. We are also actively encouraging further scientific research so we can continue to promote the health and safety of our customers and employees.

Safety instructions

For your own safety and that of your equipment, always take the following precautions.

Turn off the computer completely and disconnect the power plug (by pulling the plug, not the cord) if any of the following conditions exists:

- the power cord or plug becomes frayed or otherwise damaged
- you spill something into the case
- your Macintosh is exposed to rain or any other excess moisture
- your Macintosh has been dropped or the case has been otherwise damaged
- you suspect that your Macintosh needs service or repair
- you want to clean the case (use only the recommended procedure described later in this chapter)

Be sure that you always do the following:

- Keep your Macintosh away from sources of liquids, such as wash basins, bathtubs, shower stalls, and so on.
- Protect your Macintosh from dampness or wet weather, such as rain, snow, and so on.
- Read all the installation instructions carefully before you plug your Macintosh into a wall socket.
- Keep these instructions handy for reference by you and others.
- Follow all instructions and warnings dealing with your system.

WARNING Electrical equipment may be hazardous if misused. Operation of this product, or similar products, must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle any cables.

Handling your computer equipment

Follow these guidelines for handling your computer and its components:

- When setting up your computer, place components on a sturdy, flat surface, and carefully follow all setup instructions.
- When connecting or disconnecting a cable, always hold the cable by its connector (the plug, not the cord).
- Turn off your computer and all its components before connecting or disconnecting any cables to add or remove any component. Failure to do so could seriously damage your equipment.
- Never force a connector into a port. If the connector and port do not join with reasonable ease, they probably don't match. Make sure that the connector matches the port and that you have positioned the connector correctly in relation to the port.
- Take care not to spill any food or liquid on the computer, keyboard, mouse, or other components. If you do, turn your computer off immediately and unplug it before cleaning up the spill. Depending on what you spilled and how much of it got into your equipment, you may have to bring your equipment to an Apple-authorized service provider.
- Protect the computer and its components from direct sunlight and rain or other moisture.
- Keep all ventilation openings clear and unobstructed. Without proper air circulation, components can overheat, causing damage or unreliable operation.

WARNING This equipment is intended to be electrically grounded. Your Macintosh is equipped with a three-wire grounding plug—a plug that has a third (grounding) pin. This plug will fit only a grounded AC outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a licensed electrician to replace the outlet with a properly grounded outlet. Do not defeat the purpose of the grounding plug!

Handling the monitor

Follow these procedures for handling a monitor:

- Turn down the screen brightness control if you leave the computer turned on for extended periods. If the brightness is not turned down, the image on the screen could “burn in” and damage the screen.

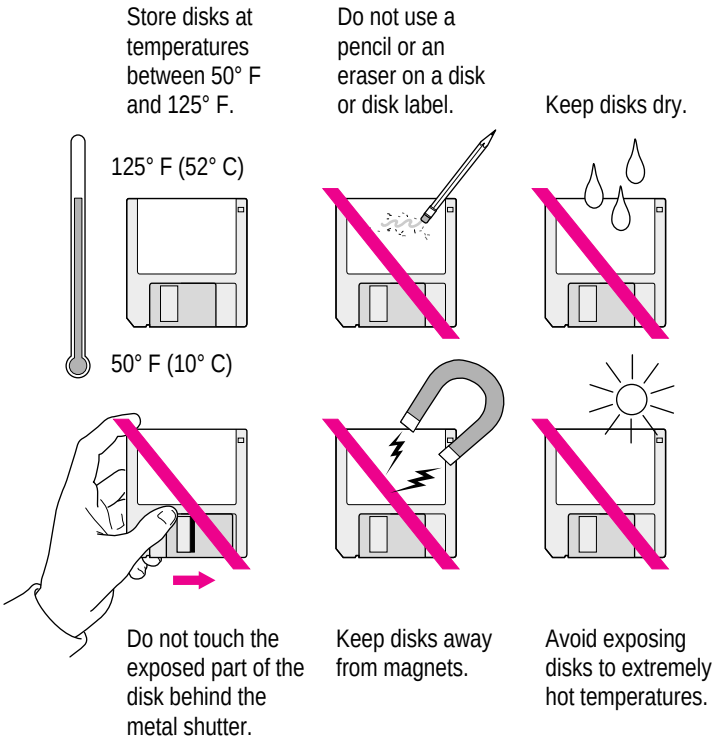
  You can also use a “screen saver” program, which dims or varies the image on the screen when the computer has been idle for a specified period of time. These programs are available from independent suppliers and user groups.
- Make sure that the ventilation openings on the computer and the monitor are clear and unobstructed.
- Some large monitors cannot safely be placed on top of the computer. Check the instructions that came with the monitor for setup information.
- If there is interference on the monitor’s screen or on a television or radio near your computer, move the affected equipment farther away.

Handling the keyboard

Take care not to spill any liquid on the keyboard. If you do, turn off your computer immediately.

- If you spill liquid that is thin and clear, unplug the keyboard, turn it upside down to let the liquid drain out, and let it dry for 24 hours at room temperature. If, after you take these steps, the keyboard doesn’t work, take it to an Apple-authorized service provider for repair.
- If you spill liquid that is greasy, sweet, or sticky, unplug the keyboard and take it to an Apple-authorized service provider for repair.

Handling floppy disks



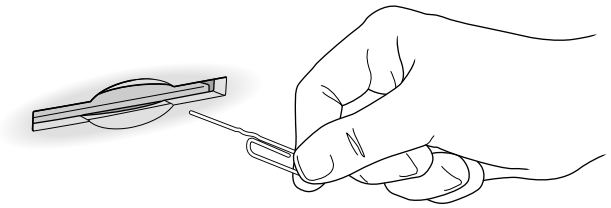
Ejecting a disk

For instructions on ejecting a floppy disk, a CD-ROM disc, or a removable media disk, see the “Disks” topic of Macintosh Guide, available in the Guide (?) menu.

If you can't eject a floppy disk

If you can't eject a floppy disk in the usual way, try the following in order:

- Hold down the ⌘ and Shift keys and press the number 1 key on your keyboard to eject a disk in the internal disk drive.
- Turn off the computer. If the disk isn't ejected, then hold down the button on your mouse or other pointing device while you turn the computer on again.
- Locate the small hole near the disk drive's opening, and carefully insert the end of a large straightened paper clip into it. Push gently until the disk is ejected. Do not use excessive force.



If nothing works, take the computer or disk drive to your Apple-authorized service provider to have the disk removed.

Power supply

The power supply in your computer is a high-voltage component and should not be opened for any reason, even when the computer is off. If the power supply needs service, contact your Apple-authorized dealer or service provider.

Cleaning your equipment

Follow these general rules when cleaning the outside of your computer and its components:

- Use a damp, soft, lint-free cloth to clean the computer's exterior. Avoid getting moisture in any openings.
- Don't use aerosol sprays, solvents, or abrasives.

Cleaning the computer case

To clean the case, do the following:

1. **Turn off the computer completely and then disconnect the power plug. (Pull the plug, not the cord.)**
2. **Wipe the surfaces lightly with a clean, soft cloth dampened with water.**

Cleaning the monitor

To clean the screen, put household glass cleaner on a soft cloth and wipe the screen. Don't spray the cleaner directly on the screen, because the liquid might drip into the monitor or computer.

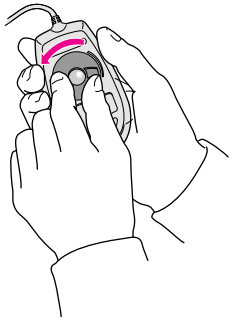
Cleaning the mouse

The mouse contains a small ball that must roll smoothly for the mouse to work properly. You can keep this ball free of dirt and grease by using the mouse on a clean, lint-free surface and cleaning it occasionally.

You need a few cotton swabs and a clean, soft, lint-free cloth.

1. **Turn off your computer.**

2 **Turn the mouse upside-down and turn the plastic ring on the bottom counterclockwise to disengage it.**

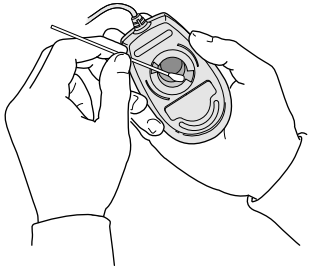


If you have an older mouse, you may need to press the plastic ring (rather than turn it) to disengage it.

3 **Turn the mouse right-side up with one hand and catch the ring and the ball with your other hand.**

4 **Clean the three small rollers inside the mouse with a cotton swab moistened with water.**

Rotate the rollers to clean all around them.



5 **Wipe the mouse ball with a clean, soft, dry, and lint-free cloth.**

6 **If necessary, wash the mouse ball with warm soapy water (use a mild soap such as a dishwashing liquid) and then dry the mouse ball thoroughly.**

7 **Gently blow into the mouse case to remove any dust that has collected there.**

8 **Put the ball and the ring back in place.**

Your mouse should roll smoothly across your mouse pad or desk. If it doesn't, repeat these instructions carefully.

Read this appendix for instructions on installing an expansion card in you computer.

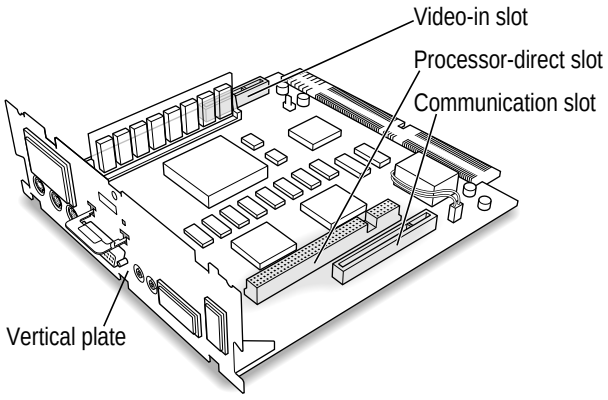
Appendix B
Installing an Expansion Card

Expansion cards are printed circuit boards that can be installed in your computer to give it special capabilities, such as enhanced video capabilities, networking and communications, and additional processing power.

You can install expansion cards by following the instructions that came with the card, or by following the instructions in this appendix. However, be sure to read this appendix for instructions that may be specific to your computer.

Cards fit into slots on the computer's logic board, the board that holds the components that make your computer work. There are three types of slots on your computer's logic board, each labeled on the board:

- a communication slot for an internal modem or an Ethernet card
- a video-in slot for a card that brings signals into the computer from a videocassette recorder (VCR), laserdisc player, video camera, or similar device
- an LC-compatible 68030 processor-direct slot (PDS) for most other cards



Note: The process you use to install a TV tuner card is different from the one described in this appendix. See the documentation that came with that card for instructions.

WARNING To avoid damaging your computer and expansion card, do not attempt to install any expansion card without first checking the documentation for that card. If the documentation specifies that an Apple-certified technician must install the card (usually because the installation requires special training or tools), consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance. If you attempt to install the card yourself, any damage you may cause to the computer or card will not be covered by the limited warranty on your computer. If the card is not an Apple-labeled product, check with an Apple-authorized dealer or service provider to see if you can install it yourself.

Installing an expansion card involves three steps:

- opening the computer
- inserting the card into a specific slot
- closing the computer

Opening the computer

1 **Shut down your computer by choosing Shut Down from the Special menu.**

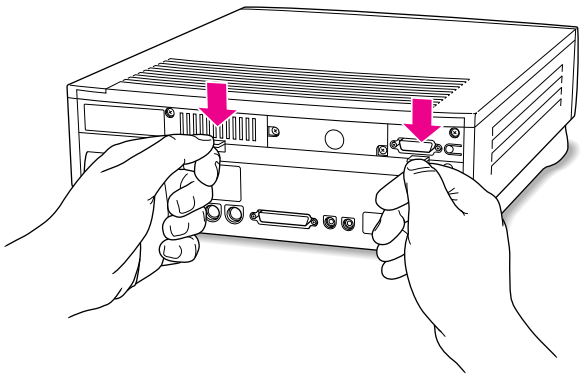
You can also press the Power key on the keyboard.

2 **Unplug all the cables except the power cord from your computer.**

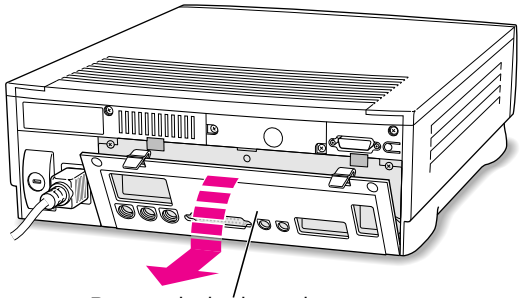
Leaving the power cord plugged in helps protect the computer from electrostatic discharge.

IMPORTANT To avoid generating static electricity that may damage components, do not walk around the room until you have completed the installation of the expansion card and closed the computer. Additionally, move the logic board as little as possible while it is outside the computer case.

3 **Place your thumbs on the two tabs at the top of the back panel, and press down.**

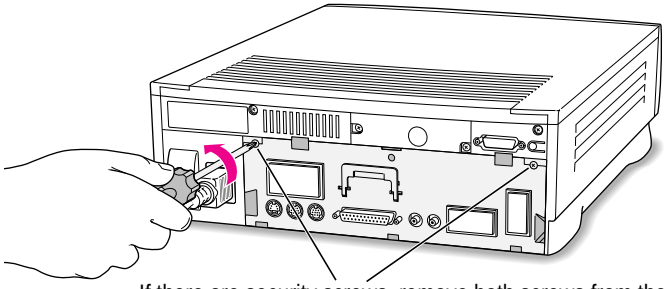


4 **Pulling gently, swing the panel down, and slip it out.**



Remove the back panel.

5 **If there are security screws on the vertical plate on the back of the computer, remove them with a Phillips screwdriver.**

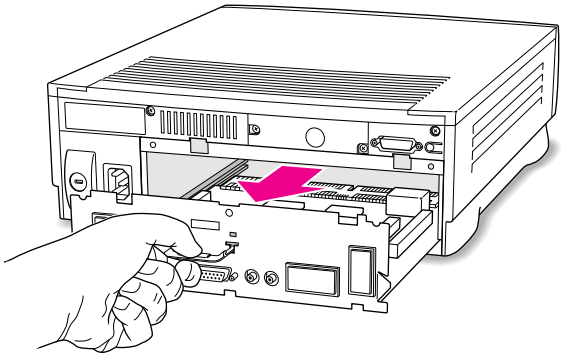


If there are security screws, remove both screws from the vertical plate.

6 **Unplug the power cord from your computer.**

7 **Swing the handle out from its storage position. Then grasp the handle and gently but firmly pull it toward you.**

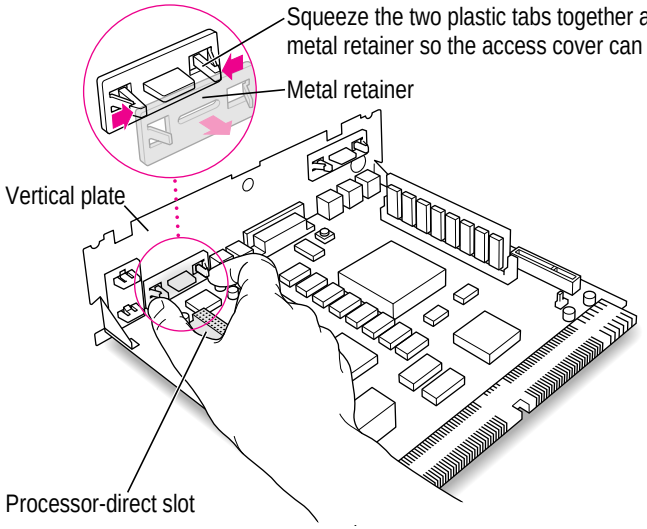
The vertical plate and the logic board to which it's attached slide all the way out of the computer.



What you do next depends on the type of expansion card you want to install.

Installing a processor-direct slot (PDS) card

1 **If your PDS (processor-direct slot) card has ports for connecting equipment, remove the plastic access cover from the vertical plate.**

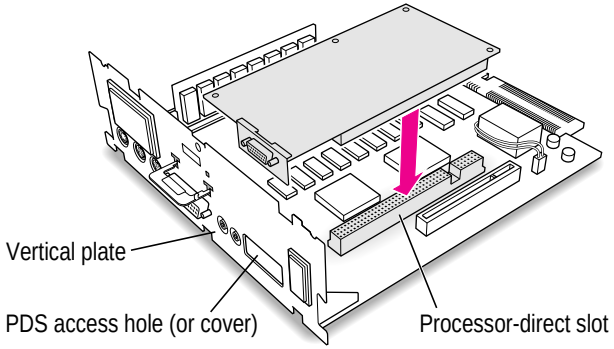


2 **Remove the PDS card from its static-proof bag.**

Hold the card by its edges to avoid touching any connectors on the card.

3 **Locate the slot on the logic board labeled LC PDS SLOT.**

4 **Align the card over the processor-direct slot.**

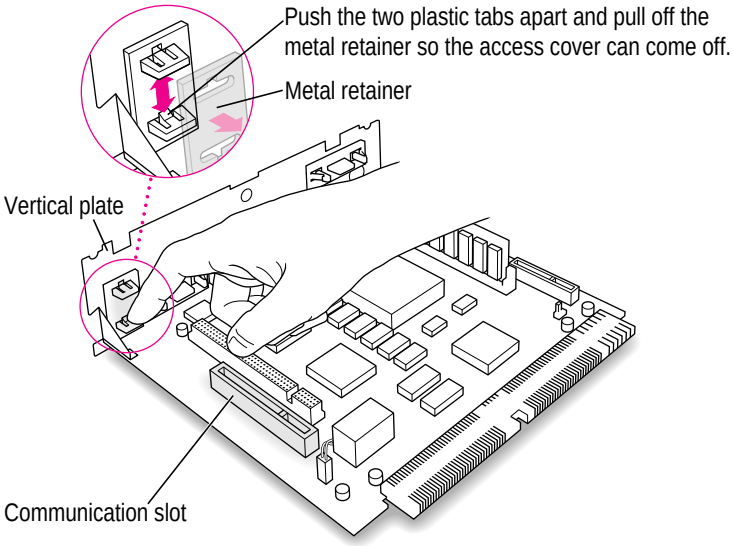


5 **Press down on the card until the connector is solidly in place.**

Don't force the card. If you meet resistance, pull the card out and try again. To see if the card is properly connected, lift it gently. If it resists and stays in place, it's connected.

Installing a communication card

1 **If your communication card has ports for connecting equipment, remove the plastic access cover from the vertical plate.**

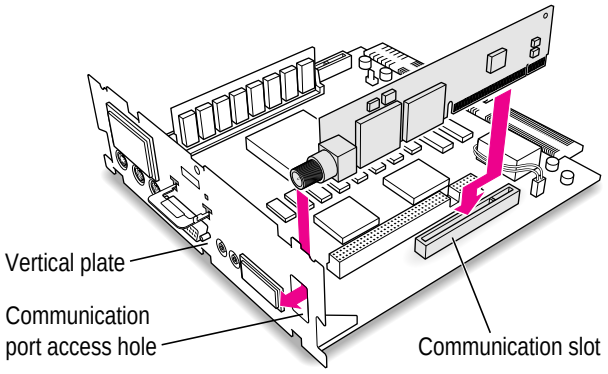


2 **Remove the communication card from its static-proof bag.**

Hold the card by its edges to avoid touching any connectors on the card.

3 **Locate the slot on the logic board labeled COMMUNICATION SLOT.**

4 **Align the card over the communication slot.**



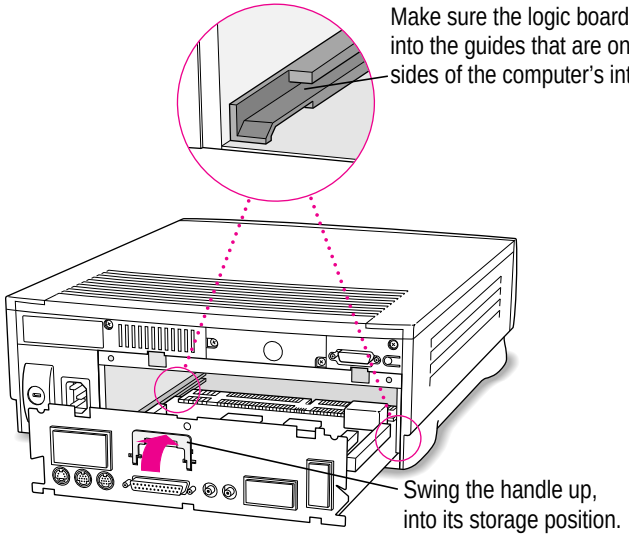
5 **Press down on the card until the connector is solidly in place.**

Don’t force the card. If you meet resistance, pull the card out and try again.

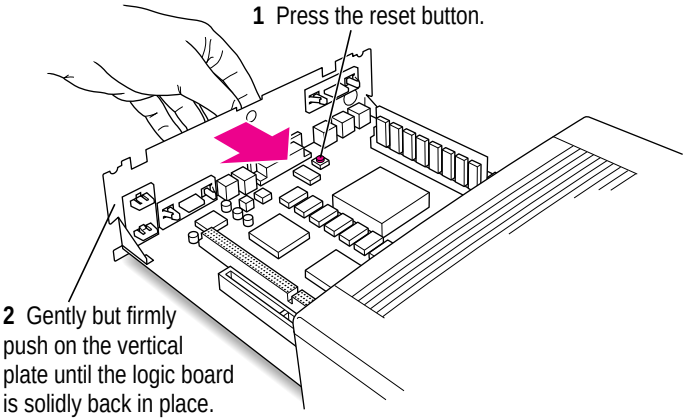
To see if the card is properly connected, lift it gently. If it resists and stays in place, it’s connected.

Closing the computer

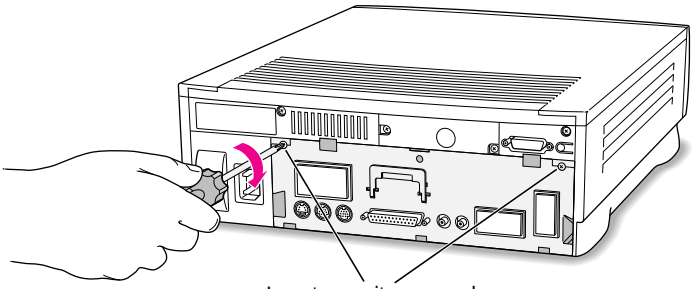
1 **Slip the base of the logic board into the guide rails inside the computer case and swing the handle back into its storage position.**



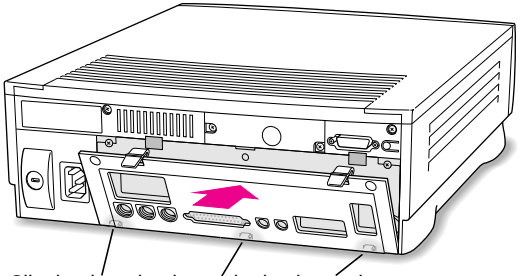
2 **Press the reset button on the logic board, and then slide the logic board back into the computer.**



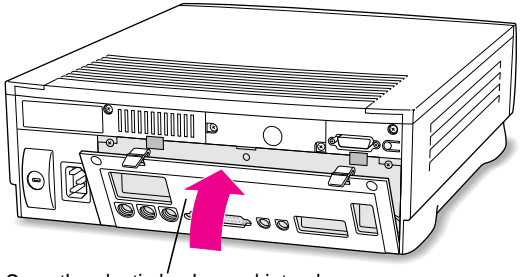
3 **If you removed security screws earlier, reinsert them now.**



4 **Slip the three hooks at the base of the back panel into the grooves on the computer case.**



5 **Swing the back panel up and snap it into place.**



6 **Plug the cables back into the computer.**

7 **Reconnect the power cord.**

Your computer is now ready to turn on and use.

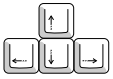
WARNING Never turn on your computer unless all of its internal and external parts are in place. Operating the computer when it is open or missing parts can be dangerous, and can damage your computer.

Read this appendix to learn how to use the special keys on your keyboard.

Appendix C
Special Keys on Your Keyboard

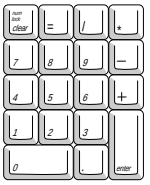
Your computer keyboard contains certain special keys that typewriter keyboards don't have. Many of these keys allow you to give commands to the computer without using the mouse. For example, in many application programs, pressing the ⌘ (Command) key at the same time as the Q key is often an alternative method of quitting a program.

The following table describes what you can do with the special keys on your keyboard. The number of special keys on your keyboard may vary from this list; it depends on the model of keyboard you have.

Special keys on Apple keyboards		
Arrow keys		Use to move the insertion point, as an alternative to using the pointer. In some programs, the arrow keys have other functions.
Caps Lock key		Use to capitalize a series of letters (numbers and symbols aren't affected).
Clear key		Use to delete the current selection (or use the Delete key). In some programs, Clear has other functions.
⌘ (Command) key		Use in combination with other keys as an alternative to choosing a menu command.

continued ▶

Special keys on Apple keyboards *(continued)*

Control key		In combination with other keys, this key provides shortcuts or modifies other actions.
Delete key		Use to delete selected material, or the character to the left of the insertion point.
Enter key		In a dialog box, pressing Enter is the same as clicking the outlined button. In some programs, pressing this key confirms information you have provided.
Escape key		The function of this key depends on the program you're using.
Function keys		Some programs allow you to use the 12 function keys to give commands. You can assign commands or action sequences to function keys with special utility programs.
Option key		Use in combination with other keys to produce special characters or modify actions.
Numeric keys		Use to produce numbers and mathematical symbols; some programs use these keys as function keys to initiate actions.
Power key		On some models, press to turn on the computer. Also press to shut down the computer on certain models.
Return key		Use to move the insertion point to the beginning of the next line. In a dialog box, pressing Return is the same as clicking the outlined button.
Shift key		Use to produce capital letters (or the upper character on the key).
Other special keys		The function of these keys depends on the operating system and program you're using.
Tab key		Use to move the insertion point to the next stopping place (such as a tab stop or field in a dialog box or program).

If you can't find what you're looking for in this index, look in Macintosh Guide—available in the Guide (?) menu on your computer.

Index

A

active application program 13, 18, 37
air circulation around case 81
Apple-authorized service providers, contacting
  damaged keyboards 50
  initialization fails 56, 58, 63
  installing additional RAM 34
  installing expansion cards 88
  installing internal drives 34
  installing special hardware 51
  mouse connection problems 49
  repair service 40
  replacing the battery in computer's clock 43
  "sad Macintosh" icon continues to appear 45
Apple Desktop Bus (ADB) port 6, 7, 30, 50
Apple HD SC Setup program 57–58, 60–61, 68
Apple PlainTalk Microphone, connecting 31
AppleScript program 35
Application menu
  Finder 14, 18, 25
  Hide Others command 38
  identifying active program 13, 18, 37
  Show All command 38
  switching programs 13, 37
application programs
  activating 13, 18, 37
  installing 35–36
  not installed with the Installer program 67
  opening documents created in a different program 52
  working with several at a time 37–38
arrow keys 99
arrow pointer
  doesn't move when you move the mouse 48–49
  "frozen" on screen 39, 47
  moving 12
Audio In port on speakers 32

B

backing up files and disks 38
Balloon Help 26
basic Macintosh skills 12–13
battery in computer's clock, replacing 43
blinking question mark icon on screen 9, 44, 64
"bomb" message on screen 39, 41, 48
brightness control 10, 43, 82

C

cables
  connecting and disconnecting, safety instructions 81
  for connecting external speakers 32
  keyboard 6, 7
  monitor 5
  mouse 6, 7
Caps Lock key 99
carpal tunnel syndrome 76
CD-ROM disc, starting up the computer from 54–55
CD-ROM drive
  illustration 29
  installing 34
CDs, playing 33
cleaning
  case 85
  keyboard 82
  monitor 79, 85
  mouse 85–86
  spills 81, 82
Clear key 99
clicking icons 27
clock, troubleshooting 43
close box 13
closing the computer 95–97
Command key 99
commands
  assigning to function keys 100
  shortcuts for 27–28, 99–100
communication card access cover, illustration 30, 93
communication card, installing 93–94
communication slot on logic board 88, 93–94
computer system, illustration 29
connecting. *See also* installing
  additional equipment 29–33
  Apple PlainTalk microphone 31
  external stereo speakers 32–33
  monitor 3–5
  mouse and keyboard 6–7
connectors, handling 81
Control key 100
control panels
  compatibility problems with 47, 48
  Extensions Manager 47, 48
  Memory 51
  PC Exchange 52, 53
copying
  files and disks 38
  program disks to your hard disk 36
cumulative trauma disorders (CTDs) 76
customer support 15, 40
Custom Install dialog box 72

D

Delete key 100
desk accessories 37
desktop
  hiding and showing windows on 38
  rebuilding 42, 46, 52
dialog boxes
  Custom Install 72
  Easy Install 66, 69, 70
Disk First Aid program 61–63, 65, 68
disks. *See* floppy disks; hard disk
Disk Tools disk
  starting up the computer from 55
  using the Apple HD SC Setup program 60–61
  using the Disk First Aid program 61–63, 65, 68
  using the Internal HD Format program 60
document stand 79
DOS computers
  using documents created from 52, 53
  using floppy disks formatted for 47

E

Easy Install dialog box 66, 69, 70
ejecting disks 83–84
electrical grounding 2, 81
electrical safety 80
electromagnetic emissions 79
Enter key 100
erasing selected material 99, 100
error messages 39–40
Escape key 100
expanding memory 34
expansion card, installing 87–99
Extensions Manager control panel 47, 48
external SCSI hard disk, testing 60–61
external stereo speakers, connecting 32–33
eye fatigue related to computer use 77, 79

F

files, backing up 38
Finder
  activating 13, 18, 25
  automating tasks in 35
  Macintosh Guide and 18, 25
  shortcuts in 27–28
floating-point unit (FPU) 51
floppy disk drive
  illustration 29
  installing 34
floppy disks
  backing up 38
  ejecting 83–84
  formatted for DOS computers 47
  handling 83
  initializing 46
  inserting 36
  repairing 44, 46, 61–63
  starting up from 55
  unreadable 46–47
folders
  AppleScript 35
  System Folder 36, 52, 64, 65, 67, 71
  Utilities 57, 60, 62, 65, 68
formatting. *See* initializing
“frozen” screen, troubleshooting 39, 41
Function keys 100

G

glare on screen 78–79
grounding plug 2, 81
Guide menu. *See also* Balloon help; Macintosh Guide window; Macintosh Shortcuts window
  displaying 12, 17–18
  Hide Balloons command 26
  Macintosh Guide 18
  Shortcuts 27
  Show Balloons command 26
  using 14, 15

H

hard disk
  backing up 38
  checking for damage on internal hard disk 60
  checking with Disk First Aid program 62, 65, 68
  installing system software 64–73
  reinstalling system software on external SCSI hard disk 68
  reinstalling system software on internal hard disk 69–70
  repairing 44, 46, 59–63
  testing external SCSI hard disk 60–61
hard disk drive
  illustration 29
  installing 34
hard disk icon 9, 13
  doesn’t appear on the desktop 45–46, 54

headphone jack, illustration 29
health tips 75–79
Help. *See* Balloon help; customer support; Guide menu; Macintosh Guide window; troubleshooting
Hide Balloons command (Guide menu) 26
Hide Others command (Application menu) 38
hiding windows on the desktop 38
Huh? button (Macintosh Guide window) 25

I, J

icons
  Apple Desktop Bus (ADB) 6, 7
  Apple HD SC Setup 57
  blinking question mark 9, 44, 64
  “bomb” 39
  clicking 27
  defined 13
  dimmed 37
  Disk First Aid 62, 65, 68
  don’t appear correctly on screen, troubleshooting 46
  double-clicking 27
  Finder 37
  hard disk 9, 13, 45
  monitor port 5
  opening 27
  “sad Macintosh” 45
  “X” 45
identifying objects on the screen 26
Index button (Macintosh Guide window) 19, 21–22
initializing
  damaged disks 63
  external SCSI hard disk 57–58
  floppy disks 46
  internal hard disk 54–56
insertion point
  moving 100
  setting 50
Install Disk 1 disk, starting up the computer from 55
Installer program 66–67, 69–70, 71–73
  for application programs 35
installing. *See also* connecting
  additional RAM 34
  application programs 35–36
  communication card 93–94
  expansion card 87–97
  internal drives 34
  PowerTalk 35
  processor-direct slot (PDS) card 92–93
  QuickDraw GX 35
  system software 64–73
  TV tuner card 88
interference on screen or on a radio or television 82
internal drives, installing 34
internal hard disk, checking for damage on 60
Internal HD Format program 56, 60

K

keyboard
  connecting 6–7
  damaged 50
  handling and cleaning 82
  illustration 29
  positioning 77–78
  typing produces nothing on screen, troubleshooting 49–50
  wrist pain from typing on 75, 76, 79
keyboard cable 6, 7
keyboard shortcuts 27–28
keys, special 99–100

L

logic board, slots on 88
Look For button (Macintosh Guide window) 19, 23–24

M

Macintosh Guide menu 18
Macintosh Guide window
  appearance of 18
  closing 25
  expanding 25
  Huh? button 25
  Index button 19, 21–22
  Look For button 19, 23–24
  moving 25
  moving to next step in 20
  returning to 20, 25
  searching for information in 19–24
  shrinking and expanding 25
  tips for using 25
  Topics button 19–20
Macintosh Shortcuts window 27–28
Macintosh Tutorial 12–13
mathematical symbols 100
memory
  expanding 34
  “not enough memory” message 51
Memory control panel 51
menu bar 13
menu commands. *See* commands
microphone, connecting 31
modem port, illustration 30
moisture, protecting equipment from 80, 81, 82
monitor. *See also* screen
  brightness control 10, 43, 82
  connecting 3–5
  connecting a keyboard or mouse to 6, 7
  handling and cleaning 82
  illustration 29
  interference on screen 82
  positioning 3
monitor cable 5
monitor port 5, 30
monitor stand 78
mouse
  cleaning 85–86
  connecting 6–7
  connections, troubleshooting 49
  how to use 12–13
  illustration 12, 29
  positioning 12, 78
mouse button 12
mouse cable 6, 7
mouse pad 12
mouse shortcuts 27–28
moving
  arrow pointer 12
  insertion point 100
  mouse 12
musculoskeletal discomfort related to computer use 75–76

N

network, backing up files on 38
numeric keys 100

O

office furniture and equipment, arranging 77–78
opening the computer 89–91
Option key 100

P

PC Exchange control panel 52, 53
PDS card access cover, illustration 30
plugging in
  the computer 1–2
  the monitor 4
pointer. *See* arrow pointer
ports
  Apple Desktop Bus (ADB) 6, 7, 50
  Audio In (on speakers) 32
  illustration 30
  monitor 2
  sound input 31
  sound output 31, 32
posture for computer use 77–78
power button. *See* standby power button
power cord
  for computer 2
  for monitor 3, 4
  when to disconnect 80
Power key 8, 14, 100
power-on light, illustration 29
power socket, illustration 30
power supply in computer, safety instructions 84
PowerTalk, installing 35
printer port, illustration 30
processor-direct slot (PDS) card, installing 92–93
programs. *See* application programs

Q

question mark icon on screen 9, 44, 64
questions. *See* Balloon help; Guide menu; Macintosh Guide window; troubleshooting
QuickDraw GX, installing 35

R

RAM. *See* memory
rebuilding the desktop 42, 46, 52
reinitializing. *See* initializing
reinstalling. *See* installing
remote control sensor, illustration 29
repairing damaged disks 44, 46, 59–63
repair service. *See* Apple-authorized service providers; customer support
repetitive stress injuries (RSIs) 76
Restart command (Special menu) 41
restarting the computer 41
Return key 100

S

“sad Macintosh” icon 45
safety instructions for computer use 80–86
screen. *See also* monitor
  appears dark, troubleshooting 43
  avoiding image “burn in” 82
  cleaning 79, 85
  “frozen,” troubleshooting 39
  glare and reflections on 78, 79
  identifying objects on 26
screen saver programs 43, 82
scroll arrows 13
SCSI devices, troubleshooting connections 44
SCSI ID numbers 46, 57, 59
SCSI port, illustration 30
security lock port, illustration 30
service and support. *See* customer support
Shift key 100
Shortcuts (Guide menu) 27
shortcuts, keyboard and mouse 27–28
Show All command (Application menu) 38

Show Balloons command (Guide menu) 26
showing windows on the desktop 38
Shut Down command (Special menu) 14
shutting down the computer. *See* turning off the computer
Single Inline Memory Modules (SIMMs) 34
size box 13
sound input port
  connecting an Apple PlainTalk Microphone to 31
  illustration 30, 31
sound output port
  connecting external speakers to 32–33
  illustration 30, 31
special characters, typing 100
special keys 99–100
Special menu
  Restart command 41
  Shut Down command 14
spills on computer equipment 81, 82
standby power button
  illustration 30
  turning computer on/off with 2, 10, 41, 50
  when not to use 14
startup disk 45, 46, 59. *See also* CD-ROM disc; *Disk Tools* disk; *Install Disk 1* disk
static electricity, discharging 89
stereo miniplug 32
stereo speakers, connecting 32–33
switching programs 37
system extensions
  compatibility problems 47, 48
  not installed with the Installer program 67
System Folder
  backing up 65
  copying special software from Previous System Folder 71
  damaged 67
  extra copies of 36
  opening files in 52
  system software and 64
system software
  “clean” installation 67–71
  computer can’t find 9, 44
  custom installation 71–73
  defined 64
  “normal” installation 64–67
  problems with 44

T

Tab key 100
three-wire grounding plug 2, 81
title bar 13
Topics button (Macintosh Guide window) 19–20
Topics button (Macintosh Shortcuts window) 28
Trash, dragging items to 13
troubleshooting. *See also* customer support; Guide menu
  arrow pointer doesn’t move when you move the mouse 39, 48–49
  blinking question mark on screen 9, 44
  “bomb” message on screen 39, 41, 48
  can’t find an application program 52
  can’t start an application program 51
  clean installation of system software 67–71
  computer’s clock is inaccurate 43
  custom installation of system software 71–73

diagnosing problems 40
ejecting floppy disks 84
error message 39–40
“frozen” screen 39, 41, 47
hard disk icon doesn’t appear on the desktop 45–46
icons don’t appear correctly on screen 46
installing system software 64–67
interference on screen or on a television or radio 82
keyboard connections 50
mouse connections 49
not enough memory 51
repairing damaged disks 59–63
“sad Macintosh” icon 45
screen is dark 43
SCSI device connections 44
starting up from a floppy disk 45
system software 9, 44
turning the computer on 10
unreadable floppy disks 46–47
using documents created from DOS computers 52, 53
using floppy disks formatted for DOS computers 47
where to find answers 15, 39
turning off the computer 2, 14, 100. *See also* standby power button
turning on the computer 8–10, 100
TV tuner access cover, illustration 30
TV tuner card, installing 88
typing. *See* keyboard

U

unreadable floppy disks, troubleshooting 46–47
Utilities folder
Apple HD SC Setup and 57
Disk First Aid and 62, 65, 68
Internal HD Format and 60

V

ventilation for computer equipment 81, 82
vertical plate on computer 88, 90–91, 92–94
video input card access cover, illustration 30
video-in slot on logic board 88
Video Monitor program 35
virtual memory 51
volume buttons, illustration 29

W, X, Y, Z

windows
defined 13
hiding and showing on the desktop 38
work area, arranging 77–78
wrist pain from keyboard use 75, 76, 79



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